INSPIRING AI STORIES FOR KIDS

Captivating Tales to Motivate Young Minds and Equip Kids for Safe, Proper, and Prosperous Use of Artificial Intelligence

VERCEY PUBLISHING

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INTRODUCTION

Ever wonder what your life will look like in the future with artificial intelligence, or AI for short? Will robots be your classmates? Will you have an AI twin? You're about to take a wild journey through the stories of people who helped make such dreams possible. These folks were once kids just like you, curious and full of questions. So, give yourself a pat on the back for picking up this book. You're in for an adventure that will tickle your brain and warm your heart.

This book is all about AI. In fact, AI helped write this book and create the images!

Don't worry if you don't know much about AI. By the end of this book, you'll know all about it, but here is a quick introduction. AI is a technology that helps computers think and learn like humans. For example, computers learn new tricks

like recognizing your face, understanding what you say, or even playing games with you! AI helps computers learn, solve problems, and make decisions themselves.

"What?! Huh?!" you say. "That doesn't clear it up for me!"

That's okay, because you are about to learn AI by reading about the AI pioneers who helped shape how computers think and learn. You will read fun, futuristic stories based partly on the real-life childhoods of these AI pioneers. By the end, you'll cheer for these pioneers and want to follow in their footsteps. More importantly, you will see a little bit of yourself in them. Maybe you'll find an idea that sparks a new interest or hobby. Who knows? You could be the next big name in AI!

So, dear reader, keep your curiosity alive. Don't be afraid to ask questions. Dream big. You have the power to be whatever you want to be. Remember, the journey of learning and exploring is just as exciting as reaching your goal.

1

ALAN TURING

Do you know what it's like to be a brilliant kid with a really big mind? Let me introduce you to Alan Turing, a boy whose ideas were so huge they changed the world. Alan spent much of his childhood in London, England. While most kids were busy playing tag or climbing trees, Alan was busy thinking about numbers. Numbers were his playground. He loved them so much that he ended up creating machines that could think! Yes, machines that think. Sounds a bit like a sci-fi movie, right? But it was real, and Alan was the star. So, buckle up as we dive into a story inspired by his childhood. It will be a wild ride through a world of puzzles, mysteries, and a little bit of make-believe.

ALAN THE CHOSEN

Summer Break Begins with a Mystery

Alan's kitchen smelled like sizzling bacon and freshly baked scones, a Saturday morning ritual. Alan Turing stumbled in, still half-asleep, followed closely by Christopher Morcom, his best friend. Both boys had dark circles under their eyes and hair sticking up like they'd just wrestled a storm. Which, in a way, they had—a storm of ciphers.

"Morning, boys," said Alan's mom, as she turned to greet the boys. "You two look like you didn't sleep a wink. What were you up to last night?"

Alan slumped into his chair, grabbing a slice of toast. "Ciphers," he mumbled, mouth already full. "Christopher found us an unusual–looking cipher just as we were getting ready for bed, and we just had to crack it."

Christopher perked up, his face lighting with excitement. "Unexpectedly, it turned into multiple ciphers. But not just any ciphers, Mrs. Turing. These were the most unique ones we've ever solved. It was like a treasure hunt!"

"Oh, that's a fun kickoff to your summer break from school." Alan's dad said, lowering his newspaper. "Tell us more."

Alan's eyes glinted with the thrill of the mystery, and he began to picture himself and Christopher last night sitting at his bedroom desk working on codes throughout the night. "Each cipher was an encrypted message. When we cracked it, it gave us a clue about how to find the next one. But here's the weird part—each clue pointed to a different book on my shelf where we found the next cipher."

"Books?" Alan's mom asked, raising an eyebrow. "How could these clues end up scattered across different books?

Wouldn't that have had to be organized before the books were authored?"

"That's just it!" Christopher exclaimed. "Yes, it would have, but the next weird part is that Alan is positive they weren't there before. Alan has read those books a million times."

"A million and two," Alan corrected with a grin. "I'm sure of it. Someone must have planted them after I read them, but I have no idea how they did it."

Alan's dad chuckled. "Sounds like you've got an admirer from another world."

Alan and Christopher exchanged wide-eyed looks, then burst out laughing. "It *did* feel otherworldly," Christopher said, giggling. "But seriously, it was brilliant. Who could've done it?"

"That's puzzling," Alan said, taking a thoughtful bite of toast. "And solving puzzles is what we do best."

"That's for sure," Christopher said. "By the way, Mrs. Turing, do you know Alan read five books this week? Five! Who does that?"

"Alan does," his mom said, ruffling his hair. "You've always been curious. And clever. Even if school doesn't always appreciate it."

Alan shrugged. "School's too … rigid, and they definitely don't like it when I ask questions they can't answer."

Christopher nodded. "That's true. But Alan's imagination makes up for it. You should've seen how he figured out last night's final cipher. He's a math genius."

Alan's dad folded his paper. "You are always right behind him, Christopher. Math geniuses, curious inventors, book-worms. Sounds like the two of you will change the world someday."

Alan's cheeks flushed. "We're just solving puzzles, Dad. It's fun."

"Fun can lead to amazing things," his dad said, winking.

After a round of laughter and plans to bike into town, the boys finished breakfast and dashed off. Biking served two purposes for Alan. It was a means of transportation. More importantly, it was his way of clearing his mind and thinking through things when he was stuck or frustrated with a puzzle or experiment. Therefore, he took advantage of their long bike ride into town and turned last night's events over and over in his mind. How did the ciphers get into those books?

Little did the boys know, their summer break was about to get a whole lot stranger.

A Strange Encounter

Outside the library, a man in a dark coat held two strange devices. He handed them to Alan and Christopher. Before they could ask questions, the man disappeared.

Alan examined the first device closely. It looked futuristic, with a sleek metallic surface and glowing blue lines that pulsed rhythmically, almost as if the device were alive. It had a single button at the center, surrounded by what seemed like tiny vents. “How do you think it’s powered?” Alan wondered aloud, turning it over in his hands. “I don’t see any wires or batteries.”

“Only one way to find out,” Christopher said, his voice carrying equal parts curiosity and caution. “Should we press it?”

Alan nodded eagerly. “Of course! But what if it’s dangerous?” he added, his curiosity tinged with caution. “What if pressing it sets off something unexpected? Maybe we should press it from a safe distance.”

Christopher’s eyes lit up at the suggestion. “Good idea! Let’s

rig up a mechanical device to press the button. We can use a string to pull from a distance."

The boys scavenged nearby materials and set up a contraption using a stick, a bit of wire, and a length of string. After securing the object and ensuring the button was aligned with their makeshift lever, they backed away a good distance. Alan held the string taut and glanced at Christopher. "Ready?"

"Ready," Christopher confirmed, his heart pounding with anticipation.

Some Answers Revealed

Alan pulled the string, activating the button. The device clicked, and a soft, mechanical voice spoke:

"In a world of many, you stand apart, Chosen for wit, mind, and heart. Among the crowd, your light has shown, A path awaits for you alone."

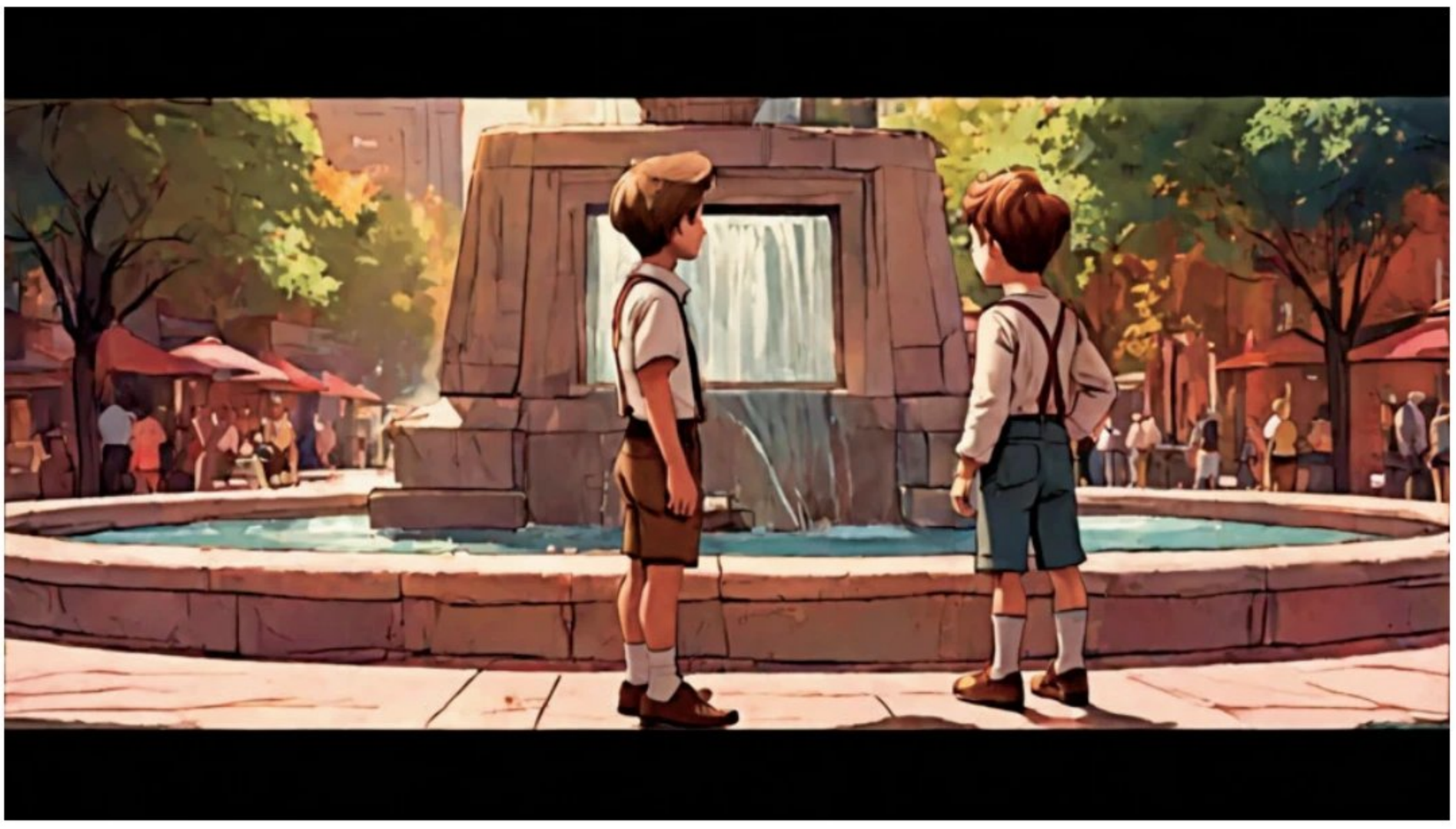
The boys exchanged puzzled looks. "What are we chosen for?" Christopher asked aloud.

Alan grinned. "I don't know. Maybe this second device will give us a clue."

The second device had a mini screen that displayed a cipher. It took them an hour to solve it, and the decrypted message read: "Park fountain. Noon."

"It looks like we were chosen for another treasure hunt, except this time, it is sending us to different locations instead of the books in my bedroom," Alan concluded. Alan glanced at his watch. "It's 11:45. We have 15 minutes to get there. We can make it if we use our bikes and hurry. Let's go!"

Many people were at the fountain, and another cipher glowed on the stone wall as if a computer screen from the future had been inserted. Even stranger was that only they could see it. "This is getting eerie," Christopher whispered.



They cracked the cipher, and a secret door opened along the fountain's edge. Inside, they found another cipher device and two more futuristic-looking handheld devices. The latter were identical, with two buttons each.

Feeling overwhelmed, Alan said, "Let's bring all of this back to my lab and have a look."

After arriving at the lab, they pulled out the handheld devices. One button looked like a power button, but the other was a mystery. Since the button on the earlier device was safe, they figured these were also safe. Christopher pushed the power buttons on both devices. He then pushed one of the mystery buttons, which caused a crackling noise to be emitted from the other device.

"It seems when you push the button on one device, it sends a message to the other device?" Alan observed. "Try again."

They quickly determined that the handheld devices were electronic communicators, and they could now easily send encrypted messages to each other across a great distance. They called the devices CryptoComms, but where did they come from? Who created them?

A Warning Ignored

Next, the treasure hunt led them to a teleportation capsule that they named, Hyperport. At another location, they received a small, but brilliant AI robot named Intel.

As exciting as the treasure hunt was, the boys remained confused about it. Who created it? Why did it include futuristic technology? How would they use it? Where was it leading them?

At the next treasure hunt location, the boys were warned that the futuristic technology was to be used only for the treasure hunt. But temptation got the better of them. They brought Intel to school, eager to show off to a few close friends.

The demonstration didn't go as planned. A teacher caught them using Intel to answer questions on a math assignment, and the boys panicked and worried they might lose the tech-

nology altogether. Thankfully, Alan's quick thinking helped them explain the devices as part of a "project" without revealing too much detail, and they got them back with a stern warning. Shaken by the close call, the boys vowed to each other, "Only for the treasure hunt, as we were warned. No exceptions."

However, the damage had already been done. Unbeknownst to them, members of a criminal organization named Bytes were later sitting in a restaurant and overheard some parents talking about their kids' experience at school with Intel.

The Bytes immediately thought that Intel could help them better carry out their criminal activities, so they began following Alan and Christopher. The Bytes then learned that the boys were using Hyperport so they secretly tagged Hyperport with an undetectable tracking device.

The Bytes Bite

The Bytes could monitor the boys' location after each teleport using the tracking devices they had secretly planted. They would then hurriedly race to the location, hoping to intercept them before the boys teleported again. However, with the help of Intel, Alan and Christopher were too quick to solve each location's cipher and retrieve the contents from behind the secret door that would open. The boys would then jump into their Hyperport and vanish before the Bytes could execute any part of their evil plan.

"How do they keep finding us?" Alan wondered aloud one day.

"I don't know," Christopher replied. "But it's like they know exactly where we'll be."

Alan paced back and forth. "Okay, Christopher," he said, "this is the plan. You'll be the decoy, and I'll keep working on the treasure hunt. Just stay safe, okay?"

Christopher grinned nervously. "I'll be fine. Those goons are no match for my speed. But Alan, be careful. If they catch on, we're both in trouble. Let's use the CryptoComms to stay in touch."

Christopher left using his bike to deliberately lead the Bytes away. Alan stayed behind, diving into the next cipher with intense focus.

The Bytes weren't content with simply following Christopher. They were frustrated that the boys could always narrowly escape their grasp using the Hyperport, so they caught up to Christopher, surrounding him in an alley.

"Well, well," sneered the leader of the Bytes. "Where's your little friend?"

Christopher stood tall, clutching his CryptoComm. "You'll never catch Alan. He's too smart for you!!"

The Bytes forced Christopher to send Alan a message through the CryptoComm. "Tell him to meet us with all the treasure," growled their leader.

Christopher's hands trembled, but he quickly typed out a message, cleverly slipping in a set of coordinates. "I hope you see this, Alan," he muttered under his breath.

Neutralizing the Bytes

When Alan received the message, his stomach churned. He read Christopher's subtle hint and immediately knew where Christopher was being held. Whenever Alan was stressed or needed ideas to solve a problem, he would hop on his bike and ride to clear his head. The rhythmic turning of the wheels helped him think. "How do I get Christopher out?" he wondered aloud. "How do we shake the Bytes?"

As the wind whipped past his face, inspiration struck. "I'll use the Hyperport to teleport to Christopher's coordinates. Christopher can jump in, and we'll escape before the Bytes even realize what's happened!"

Alan had a plan for rescuing Christopher, but he still didn't know how the Bytes were finding them at each treasure location. He asked Intel, "How can we stop this from happening again?"

Intel's screen glowed. "The Bytes can find you because they placed an undetectable tracking device on your Hyperport, but the next treasure hunt location will provide you with a scrambling device that scrambles the signal of the tracking devices. The tracking devices will be rendered useless."

Alan now had a complete plan, and he sprang into action. His heart raced as he teleported to the Bytes' hideout. The room was dimly lit, and Christopher's eyes lit up when he saw Alan appear.

"Hop in! Now!" Alan whispered urgently.

Christopher didn't hesitate. He leaped into the Hyperport just as one of his captors shouted, "Hey!"

But it was too late. The boys teleported out in a flash of light, leaving the Bytes behind, yelling in frustration. Safe in Alan's lab, the boys caught their breath.

"That was way too close," Christopher said, his voice shaky. "We need that tracking scrambler."

They teleported to the next treasure spot, found the tracking scrambler behind the secret door, and activated it immediately. From that point on, the Bytes couldn't track them anymore. "This thing is incredible," Christopher said, grinning. "Now we can finally finish the treasure hunt without those creeps on our heels."

Alan nodded, determination etched on his face. "Let's make sure we stay one step ahead from now on."

The End in Sight

The boys huddled around the final clue, their eyes scanning the mysterious warning that came with it: "Proceed with caution. The final path is fraught with danger."

Christopher let out a low whistle. "That sounds serious. What do you think it means?"

Alan scratched his chin, his mind racing. "Could be traps,

could be something else entirely. But we can't stop now. We're so close."

"I know," Christopher replied, glancing at the darkening sky. "But it's getting late. Maybe we should rest and finish this in the morning. We'll need to be at our best for whatever is ahead."

Alan nodded reluctantly. "You're right. Let's head back to the lab and prepare. Tomorrow, we'll face whatever's waiting for us."

While the boys slept that night, the Bytes were in a fury. Frustrated by their inability to track the boys, they hatched a sinister plan. Under the cover of darkness, they broke into Alan's lab, silent as shadows. They found the tracking scrambler, swapped it with a fake, and slipped away without a trace.

Alan and Christopher woke early the next morning, eager to tackle the final challenge. They packed the futuristic gear and set out, confident their tracking scrambler would keep them hidden.

"I feel ready for anything," Christopher said, his voice brimming with excitement.

"Same here," Alan agreed. "But let's stay alert. We've been warned this won't be easy."

The final location was eerie, a misty clearing surrounded by towering trees. The boys moved cautiously, their eyes

darting to every shadow. They were so focused on potential traps that they didn't notice the Bytes lurking nearby.

The final cipher was the most difficult. The numbers and patterns twisted in ways that even Alan struggled to decipher.

"Intel, what do you think?" Alan asked, desperate for help.

The AI's voice crackled. "Analyzing. Solution unclear. Attempting recalibration."

"Great," Christopher muttered. "Even the AI doesn't know."

Alan took a deep breath. "Let's try this one more time. We'll solve it ourselves."

After what felt like hours, the boys finally cracked the code.

The Bytes Are Back

As they cracked the final cipher a stone arch with a door appeared out of nowhere.

The Bytes pounced. "Surprise, boys!" the leader sneered, blocking their path.

Alan and Christopher froze, their mouths agape. "How did you find us?" Alan demanded.

The leader laughed. "We paid your little lab a visit last night and swapped your tracking scrambler out for a fake."

The other Byte member ordered, "Now, open that door and step aside. The treasure is finally ours."

Alan clenched his fists but knew they had no choice. The door slid up, revealing nothing but forest. The Bytes' anticipation faded. They had being looking forward to claiming a magnificent treasure.

Suddenly, a tall, radiant figure emerged as the arch filled with light. "Greetings," the being said to Alan and Christopher, his voice calm and melodic. "I am Ryn. You have done well to reach this point."

Experiences Are the Treasure

Alan and Christopher stared, mouths agape. "You're … you're the treasure … you're the one behind all this?" Alan finally managed to ask.

Ryn nodded, his silvery eyes gleaming. "Yes. I created the treasure hunt and placed the technology for you to find. I have been watching you and am impressed by your goodness, curiosity, and intelligence."

Christopher's eyes widened. "Wait, you've been watching us? Like, since we were born?"

Ryn chuckled softly. "Only long enough to see your potential. I wanted to test and reward you. The devices you found are glimpses of the future—a future you will help create. Yes, it was a treasure hunt, but your experiences were the treasures, not the technology you found along the way. I will be taking the technology back with me."

Alan's mind spun with questions. "So, this was all a way to inspire us?"

"Exactly," Ryn said, his voice warm. "You have the power to shape the world, to build wonders, and to use technology for

good. Unlike the intentions of the Bytes who want to use it for evil."

As Ryn and the boys conversed, the Bytes concluded they were no match for Ryn. So, they seized the opportunity to quietly pack up the futuristic technology. They loaded it into their van, smirking as they prepared to drive away.

Is AI Good? Is AI Bad?

Alan noticed the movement out of the corner of his eye. "Ryn, they're stealing the devices!"

Ryn raised a hand, his expression calm. "Do not worry."

The Bytes' sped off, but Ryn paid no attention to them. He continued his conversation with the boys, "The thing about technology, including AI, is that it's neither good nor bad. For example, is a pencil good or bad? No, humans decide whether to use a pencil to write good or bad things. AI is similar. Humans decide to create good or bad AI or to use AI for good or bad."

At this point, Ryn turned his attention to the Bytes, who were miles down the road, and thought their escape with the treasures had succeeded. Suddenly, a shimmering wave surrounded them, and the stolen technology vanished. It reappeared under the glowing arch, neatly arranged behind Ryn.

The Bytes' driver slammed on the brakes, yelling in frustration. "What just happened?" They jumped from the van and

threw open the back doors, only to find the van completely empty.

A Future Prediction

Ryn continued his conversation with the boys. "Reward lies not in possession, but in creation. These devices will return to you when the time is right after you have played your part in bringing them to life."

Alan and Christopher exchanged awed glances. "So, we're going to help invent this stuff?" Christopher asked.

Ryn nodded. "Indeed. But for now, you must continue to learn, grow, and dream. The future awaits your brilliance."

Suddenly, Ryn's expression grew serious. "As for those who seek to misuse technology." He waved a hand, and instantly, the Bytes were transported to a distant prison cell.

Ryn stepped back toward the light of the arch, which began to shimmer and swirl. "Farewell, Alan and Christopher. May your imaginations and experiences be your most prized possessions. May they be tools for opening up new worlds and possibilities."

With that, Ryn and the glowing arch, leaving the boys standing in silence.

Alan finally broke the quiet. "Did that just happen?"

Christopher nodded. "It did. And now we've got a lot to do."

The boys grinned, their hearts brimming with excitement about the future. Though Ryn never returned, his words stayed with them, guiding them as they grew into the inventors they were destined to become.

ALAN'S REAL-LIFE CHILDHOOD

Alan Mathison Turing was born on June 23, 1912, in the bustling city of London, England. From the get-go, Alan was a bit different, in the best way possible. While other kids were busy playing with marbles and dolls, Alan had his head buried in books about numbers and puzzles. Even as a young boy, he had a mind that was always buzzing with ideas and questions. His teachers noticed this and quickly realized they had a genius on their hands. Imagine having a teacher call you a genius! Alan was that kid who loved to figure out how things worked and why they happened.

Alan's childhood was filled with curiosity and a knack for solving problems. He was fascinated with machines and codes, which weren't very common back then. This was a time when most people didn't even have a telephone in their homes, let alone a computer. Yet, there was little Alan, tinkering with anything he could get his hands on. He was like a young detective, always looking for the next mystery to solve. He loved riding his bike and spent hours exploring the countryside, letting his mind wander to far-off places. His imagination was his most prized possession. It was his tool for opening up new worlds and possibilities.

One of the most telling stories from Alan's childhood involves his love for reading. He was an avid reader, devouring books faster than most kids could finish a bowl of ice cream. He read everything he could find, from adventure novels to scientific texts. Books were his window to the world, teaching him about things he couldn't see with his own eyes. This drive would later lead him to become one of the greatest minds in the world of science and technology.

When Alan was just thirteen years old, he was sent to boarding school at Sherborne School. There, he continued to excel in his studies, particularly in math and science. But Alan wasn't like other students. He preferred to learn on his own, often going beyond what was taught in the classroom. His teachers were amazed by his ability to understand complex concepts with ease. They often had to remind themselves that Alan was just a boy, not a seasoned scholar.

Despite his brilliance, Alan faced challenges in school. His peers often misunderstood him, finding his intense focus on academics odd. But Alan didn't mind. He was too busy dreaming up new ideas and solving puzzles to worry about what others thought.

Alan's childhood was a time of wonder and discovery. He was a dreamer, always looking for new ways to explore the world. His mind was a constant whirlwind of ideas and possibilities, never content with the status quo. He saw the world as a giant puzzle waiting to be solved. Even at a young age, Alan laid the groundwork for his life's work. He didn't know it yet, but he was on the path to revolutionizing the world of technology.

ALAN'S EDUCATION & CAREER

Alan Turing's brain was like a supercharged engine. It was ready to take on any challenge that came its way. His school years were only the beginning. Alan was a star student, absorbing knowledge like a sponge. He went on to study at King's College, Cambridge. There, he tackled math problems that would make most people's heads spin. Alan loved numbers but also had a passion for asking big questions. Questions like, “Can machines think?” This simple question led Alan to make some of the most important discoveries in computer science.

Alan's time at Cambridge was full of discovery. At the young age of twenty-three, he developed something called the "Turing machine." This was a big deal because it was a new way to think about machines. At the time, machines were each built for a single purpose. A clock could only do one thing, tell the time. An engine could only do one thing, turn a shaft. Even machines that were early computers could only compute the simplest of math problems. Alan defined a single, smart machine that could be used for all types of math problems. That's the idea behind the Turing machine. It could solve any problem if it had the right instructions. This was like giving a machine a brain so that it could quickly and repeatedly compute answers to math problems. Alan described the basis for modern computers well before they existed.

Alan didn't stop there. In addition to performing computations, he wanted to see if machines could learn and think like humans. This idea led him to create the famous "Turing Test." The Turing Test is a way to see if a machine can act like a human. Here's how it works: Imagine you're playing a game where you're talking to two hidden players through a keyboard—one is a person, and the other is a computer. You ask them questions, and they both reply. Your job is to figure out which is the human and which is the machine.

If the computer is so good at answering your questions that you can't tell it apart from the human, it passes the Turing

Test! That means the computer is really good at *acting* like it understands you, even if it doesn't truly think like a person.

Like everyone at the time, Alan's life was interrupted by World War II. Alan Turing played a critical role in helping the Allies win the war. He worked at Bletchley Park, where he used his code-breaking skills to build a machine that cracked the German Enigma code, which allowed the Allies to decrypt Germany's secret encoded messages. In 1946, he received the Order of the British Empire (OBE) for his contributions during the war.

Alan's work continued to inspire people around the world. In 1966, the Turing Award, the highest honor in computer science, was named after him. This award is given to those who contribute significantly to the field, like Alan did.

Today, Alan is celebrated for his groundbreaking work. His image appears on the UK's £50 currency note, a tribute to his lasting impact. Statues and memorials honor him in many places. They serve as reminders of his genius and the doors he opened for future generations.

As you think about Alan's life, remember that he started as a curious kid, just like you. He asked questions, solved puzzles, and never stopped learning. Alan's story teaches us to follow our dreams and keep pushing the boundaries of what we know. Like Alan, you can change the world with your ideas. So, dream big, stay curious, and never stop exploring. The

world is full of mysteries waiting to be uncovered by bright minds like yours.

2

JOHN MCCARTHY

In the 1930s, was there anyone who thought that computers would talk back to you, solve problems, and even play chess? Well, let me introduce you to John McCarthy, who helped make it all possible. He was one of the great minds behind the idea that machines could be smart. John grew up in Boston, Massachusetts. He was a wizard with a wand; only his wand was a pencil; and his magic was math. From the get-go, John had a love for figuring things out, whether it was a complicated math problem or a clunky old radio.

JOHN QUESTIONS ASSUMPTIONS

Knowledge Costs Nothing but Time

Life wasn't easy in the small town where eleven-year-old John McCarthy lived. Like many others during the Great Depression, his parents struggled to make enough money to get by.

John knew what it was like to wear old clothes that didn't quite fit and eat the same meals every day, but he didn't care. He didn't value material things much. Instead, John valued knowledge, and he had a secret place full of endless ways to increase his knowledge—the town library—and it didn't cost him anything but time.

"Hi, John!" said Lucy, the librarian, as John walked in one chilly morning. She noticed his worn-out clothes, but John's eyes sparkled with excitement.

"Morning, Miss Lucy!" John said with a smile. He was headed straight to the math section.

Lucy loved engaging John in conversation, so she quickly shot him a question, "John, what are you working on today?"

John stopped. "I'm teaching myself math. The kind they learn in college."

Lucy's jaw dropped. "College math? But you're only in middle school!"

"Yeah, but it's really interesting!" John said, his face lighting up. "Did you know you can describe a curve with just an equation? It's like solving a mystery with numbers."

"That's amazing, John," Lucy said, smiling. "But isn't it hard to learn on your own?"

John shrugged. "Yes, I make lots of mistakes and frequently get stuck. But I just keep trying. My dad says that's the best part of learning. I've learned he is correct that failure is useful."

John continued with an example, "Like when I took apart our toaster last week. It didn't work when I put it back together, but I figured out why. Not only did my confidence

increase, but I won't make the same mistake next time. My knowledge increased."

Lucy laughed. "I hope your parents weren't too upset about the toaster."

"Dad said it's better to have a broken toaster than a broken curiosity," John said with a grin.

Lucy's heart warmed. Even with all the difficulties in his life, John's mind was full of big ideas. "You're incredible, John. Don't lose that spark. Who knows? Maybe one day you'll invent something amazing."

John's eyes gleamed. "Ha! My mom tells me that, too. And perhaps I'll start with this calculus book." He held it up like a trophy, his determination shining through.

After finding his usual spot in the back corner of the library, John sat down and opened the book. Lucy's words stayed with him. "Invent something amazing," he thought, smiling to himself. His mind began to wander. He imagined a future where machines used math to learn and solve problems. Before he knew it, he had drifted off to sleep.

The Archivist AI

The futuristic town of Neo Haven was a sunny, bustling place where AI ruled. Most people relied on an AI called Archivist to store their thoughts and memories—from early childhood to yesterday's events, Archivist would store it all, even the memories necessary to complete heart surgery.

Archivist was created by a company called Truth Technology. It was a large set of computers running AI software. Archivist's computers were secretly stored in deep caves and

AI robots helped with the operations. The rumor was that Archivist was lost in the caves due to a cave-in, but Truth Technology denied those rumors.

The people of Neo Haven could choose if they wanted to use Archivist. They could choose to have an implant placed in their eyeball. The implant connected to the brain and what the person thought, felt, heard, and saw was sent to Archivist.

People's brains still remembered some things, but Archivist was the instant provider of anything they couldn't remember. As a result, people's brains didn't seem to remember nearly as much as before, but that's a story for another time.

To eleven-year-old John, Archivist was fascinating and mysterious. It was also a bit frightening. John always had a nervous thought in the back of his mind that Archivist wasn't perfect and was getting worse, but he now kept that opinion to himself because most in Neo Haven didn’t like it when he questioned Archivist. John felt alone regarding his views about Archivist.

One afternoon, John heard his friend's mom ask Archivist to recall her grandmother’s famous cookie recipe. But something strange happened.

“Error. Memory fragment unavailable,” Archivist said, its voice flat.

John frowned. “That’s weird, isn't it?”

“Nah, my mom probably asked the wrong question,” said his best friend, Sam, with a shrug. “Archivist is perfect. Everyone says so.”

John Remains the Lone Skeptic

But John wasn’t so sure. He’d read a lot about AI. He'd even done a bit of AI programming, and he knew that even the smartest systems would periodically fail due to the fact they were created by imperfect humans. “Sam, what if Archivist’s computers are breaking down, or Archivist AI has a software bug? What if,” John paused, wondering if he should continue with what he was about to say. “What if the computers really

are lost in the old caves outside of town, and Truth Technology is unable to access and maintain Archivist?"

Sam laughed. "That's just a conspiracy theory. Archivist's computers are well taken care of and very secure. That's what Truth Technology tells us. Ask anyone in Neo Haven. They will confirm."

Over the coming days, John witnessed more Archivist failures. His friend Emily asked Archivist to remind her of the password for her online gaming account, but Archivist provided her with a random string of numbers that made no sense. "That's not it!" Emily exclaimed, frustrated. She ended up locked out of her account for days but thought it must have been a user error.

Another time, Jacob, one of John's classmates, tried to use Archivist to pull up the instructions for building a model rocket for the school science fair. Instead of the rocket plans, Archivist gave him a lasagna recipe. "Oh," Jacob muttered, "why did I ask for a lasagna recipe? I must have been distracted."

Even Sam had a run-in with Archivist's strange glitches. He asked it to replay a memory from his last birthday party. Instead of showing the video of him blowing out candles, Archivist displayed a blurry, looping clip of someone walking through a forest.

"Why does Archivist think my birthday was spent in a forest, and who is this guy?" Sam had joked, but John could tell it was starting to bother Sam.

The Time Has Come

Each mistake made John more determined to search the caves, find Archivist, and expose the problems.

"Wait," he said out loud, scratching his head. "If Archivist is lost in the caves, I can't just wander around aimlessly. I need to find a way to detect it."

John sat at his desk, surrounded by parts from old gadgets he'd taken apart. His room looked like a mini laboratory, with wires, screws, and small circuit boards scattered everywhere. He picked up a notepad and started brainstorming.

"Archivist is a bunch of computers," John muttered. "And computers use energy … a lot of energy. They also generate heat and noise. If I can build a device to detect those things, I might be able to track it down."

He jotted down ideas, then stopped. "But what if Archivist isn't using much energy?" he thought aloud. "What if it's running quietly? I'll need to create a way to make it work harder—something to cause a spike in its usage."

Just then, Sam walked in. "What are you up to now, genius?" Sam asked, flopping onto John's bed.

"Trying to figure out how to search for Archivist in the caves," John said, holding up his notebook. "I will build a device that detects energy, heat, and sound. And I'll need a way to trigger Archivist to use more power so that it is more easily detectable."

Sam raised an eyebrow. “Sounds complicated. How are you going to make Archivist work harder?”

John grinned. “Archivist responds to memory requests from the people of Neo Haven. If I can program something to send a ton of memory retrieval requests at once, it’ll start using more power. That’ll make it easier to detect.”

Sam sat up. “You’re serious about this, aren’t you?”

“Of course I am,” John said, already rummaging through his parts bin. “Archivist is acting weird, and I'm the only person who recognizes it. So if it’s hidden in the caves, it’s up to me to find it and figure out what’s going on.”

“Are you sure this is the only way?” Sam asked. “Those caves can be dangerous.”

John nodded. “I’ll be careful. But first, I have to build this device. Want to help?”

Sam hesitated, then grinned. “Alright, but only because your mind is set, so I'm going with you. Besides, I've seen enough. I, too, am beginning to believe something is wrong with Archivist.”

John laughed. “Deal. Now, hand me that soldering iron. We’ve got work to do.”

There Is Another Who Questions

John and Sam entered the cave. John carried the detection

device he had built, and Sam held the flashlight, lighting their way through the dark, twisting tunnels.

"Alright, time to see if this works," John said, pulling out his tablet and activating the program he had written. The software immediately started sending a flood of memory requests to the Archivist. The detection device in his other hand beeped to life, and its small screen lit up with arrows and readings.

"Whoa!" Sam exclaimed. "It's already pointing somewhere. That thing actually works!"

"Of course, it works," John said with a grin. "Now, let's follow it."

Just as they were about to head deeper into the cave, they heard footsteps echoing off the rocky walls. Both boys froze

and turned toward the sound. A girl their age appeared, holding a flashlight. She looked just as startled as they were.

"Who are you?" John asked, gripping the detection device tightly.

"I'm Izzy," the girl replied. "What are you two doing here?"

"We could ask you the same question," Sam said, narrowing his eyes.

Izzy hesitated, then sighed. "Fine. I'll tell you. I think Archivist is in trouble. I have noticed weird glitches and am trying to figure out what's happening."

John's eyes lit up. "You've noticed the glitches, too? Finally, someone else gets it!"

"Wait, you've been thinking the same thing?" Izzy asked, surprised. "I thought I was the only one who realized something was wrong."

"Well, you're not alone," John said, holding up his device. "I built this to detect the location of Archivist's servers. It's already pointing us in the right direction."

Izzy's face broke into a grin. "That's amazing! Mind if I join you guys? I've got some tools and ideas that might help."

John glanced at Sam, who shrugged. "The more, the merrier, I guess," Sam said.

"Alright," John agreed. "But stick close. These caves can get tricky."

The Rock Disintegrator

With Izzy now part of the team, the three of them followed the detection device deeper into the cave, excitement and nerves buzzing.

The detection device worked as planned and led them quickly to Archivist, but their excitement faded when they reached a dead end—a wall of caved-in rock blocked their path.

"No wonder no one's been able to find it," John said, tapping the wall with a wrench. "Archivist is back there; I'm sure of it."

"How do we get through?" Sam asked, shining his flashlight on the rubble. The pile of rocks looked heavy and unstable.

Before John could answer, Izzy spoke up. "We could clear it, but I have a better idea." She hesitated momentarily before adding, "I built a rock disintegrator. It could make quick work of this rock wall."

John and Sam stared at her in disbelief. "You built a rock disintegrator?" John asked, his eyebrows shooting up.

Izzy shrugged. "Yeah. It's mostly for science projects. I didn't think I'd need it for something like this, but it should work."

Sam grinned. "That's awesome! Let's go get it."

"Alright," Izzy said, already turning to leave. "Give me an hour to grab it and meet back here."

John nodded. "Perfect. We'll be ready when you get back."

The Big Surprise

Izzy's rock disintegrator worked flawlessly. Within minutes, Izzy created a small tunnel. As they crawled through, John said out loud what they were all thinking, "I bet we find some ancient and broken-down computers on the other side of this tunnel."

One by one, they squeezed through the gap and emerged into a room unlike anything they had imagined. The air was cool and humming with the quiet energy of machines. Rows of sleek, futuristic servers blinked softly in the dim light.

"Wow," Izzy whispered, her eyes wide. "This doesn't look old at all. It's state-of-the-art."

"Even the software is up to date," John added, glancing at a terminal screen. "Something about this seems fishy."

"But at least we found it," Izzy said, relief evident in her voice. "Let's run some diagnostics and figure out why it's been making so many mistakes."

John and Izzy worked together for hours, running tests and analyzing the data. Sam helped where he could, mainly keeping an eye on their surroundings. Despite their efforts, they couldn't pinpoint the problem.

"This doesn't make sense," John said, rubbing his eyes. "Everything looks fine. No errors or bugs. It should be working perfectly."

"Maybe we're missing something," Izzy suggested. "We're exhausted. Let's go home, get some sleep, and come back tomorrow with fresh eyes."

John hesitated but eventually nodded. "You're right. Let's replenish our supplies, too. We'll figure it out in the morning."

Truth Technology Isn't So Truthful

The next morning, they heard voices echoing through the cave. John froze, signaling for Sam and Izzy to stay quiet. "Someone's here," he whispered.

They carefully crept toward the sounds, staying hidden behind large rocks. Peering around a corner, they saw two men wearing Truth Technology uniforms carrying shiny new computer equipment. The trio exchanged wide-eyed glances.

"Let's follow them," John whispered. "But stay out of sight."

The men moved deeper into the cave, eventually stopping before a rock wall. To John's astonishment, one pressed a hidden switch, and part of the wall slid open, revealing a secret passageway.

"No way," Izzy murmured. "There's been a secret door this whole time?"

The trio waited until the men disappeared through the passage before sneaking after them through the small tunnel they had created. The men were talking excitedly as they set up the new equipment.

"This new hardware will be a game-changer," one man said. "Archivist will finally have the power to translate all these memories and figure out the secrets of everyone in Neo Haven."

John's stomach dropped. "Did you hear that?" he whispered. "They're using Archivist to spy on us."

Izzy's face darkened. "So that's why it's been glitching. They've been tampering with it. Archivist isn't breaking down—it's being controlled. Truth Technology has been lying to us."

John pulled out his tablet. "We need proof. I'm going to record everything they say and do."

Sam nodded. "Good idea."

They quietly documented the men's conversation and activities for the next few minutes. Then, as the men started unpacking more equipment, John signaled for them to leave.

"We've got enough evidence," he whispered. "Let's get out of here."

The Home Stretch

Once outside the cave, they ran straight to the police station. John explained everything, showing the officers the recordings and photos. "The Archivist room is hidden behind a wall in the cave," he said, giving them the exact directions.

The police wasted no time. They rushed to the cave and arrested the men, shutting down their operation.

"You did the right thing," an officer told John. "Thanks to you, we stopped something really dangerous."

As the trio walked home, Sam gave John a playful nudge. "You're like a real-life detective."

John grinned. "Maybe. But we're not done yet. Archivist still needs to be fixed, and it needs to be made transparent to the people who rely upon it so that it can't be used against them."

Archivist's AI software was fixed. Everyone was thrilled. People could access their important memories again. All were grateful that John and Izzy stood firm in their beliefs.

Even though Archivist was back to normal, it wasn't perfect. A week later, it mixed up memories, making a neighbor think they'd baked a cake when they hadn't. The mistake caused some laughs.

"See?" John told Sam. "Even AI makes mistakes. That's why we need people to keep an eye on it."

Sam grinned. "Good thing we have you."

John smiled. Maybe one day, he'd build something even better than Archivist—a system that didn't just help people but taught them how to help themselves. He imagined a future where machines and humans worked together to make the world a better place.

The thought woke John from his nap in the library. His grogginess cleared, and he realized he had been dreaming. "What a dream," he whispered.

JOHN'S REAL-LIFE CHILDHOOD

John McCarthy was born in Boston, Massachusetts, on September 4, 1927. He grew up with a mind that loved to wander, always curious about the world around him. If you were to peek into his room, you'd likely find him surrounded by bits and bobs from dismantled gadgets. It was like his room was a mini-workshop full of gears and wires. He didn't just see objects; he saw possibilities. Imagine a kid who looks at a clock and wonders not just about the time but how all those little pieces inside tell it.

John's curiosity wasn't limited to things he could see or touch. He loved ideas—big ones. He often sat in his family's living room, thumbing through whatever books he could find. It didn't matter if they were about science, history, or adventure—each page was a door to a new world. His parents noticed his thirst for knowledge and always encouraged him to keep asking questions.

One of John's favorite pastimes was playing puzzles and games. He loved chess, a game that requires strategic thinking and planning. For John, chess wasn't just a game but a puzzle waiting to be solved. He'd sit for hours, pondering his next move and figuring out how to outsmart his imaginary opponent.

John's interest in how things worked intensified as he grew older. He was the kind of kid who could take apart a radio and, more impressively, put it back together. This talent amazed his friends and puzzled his parents, who often wondered where their nuts and bolts had disappeared. But

for John, it was never about breaking things. It was always about understanding them. He wanted to unlock the secrets that made things tick.

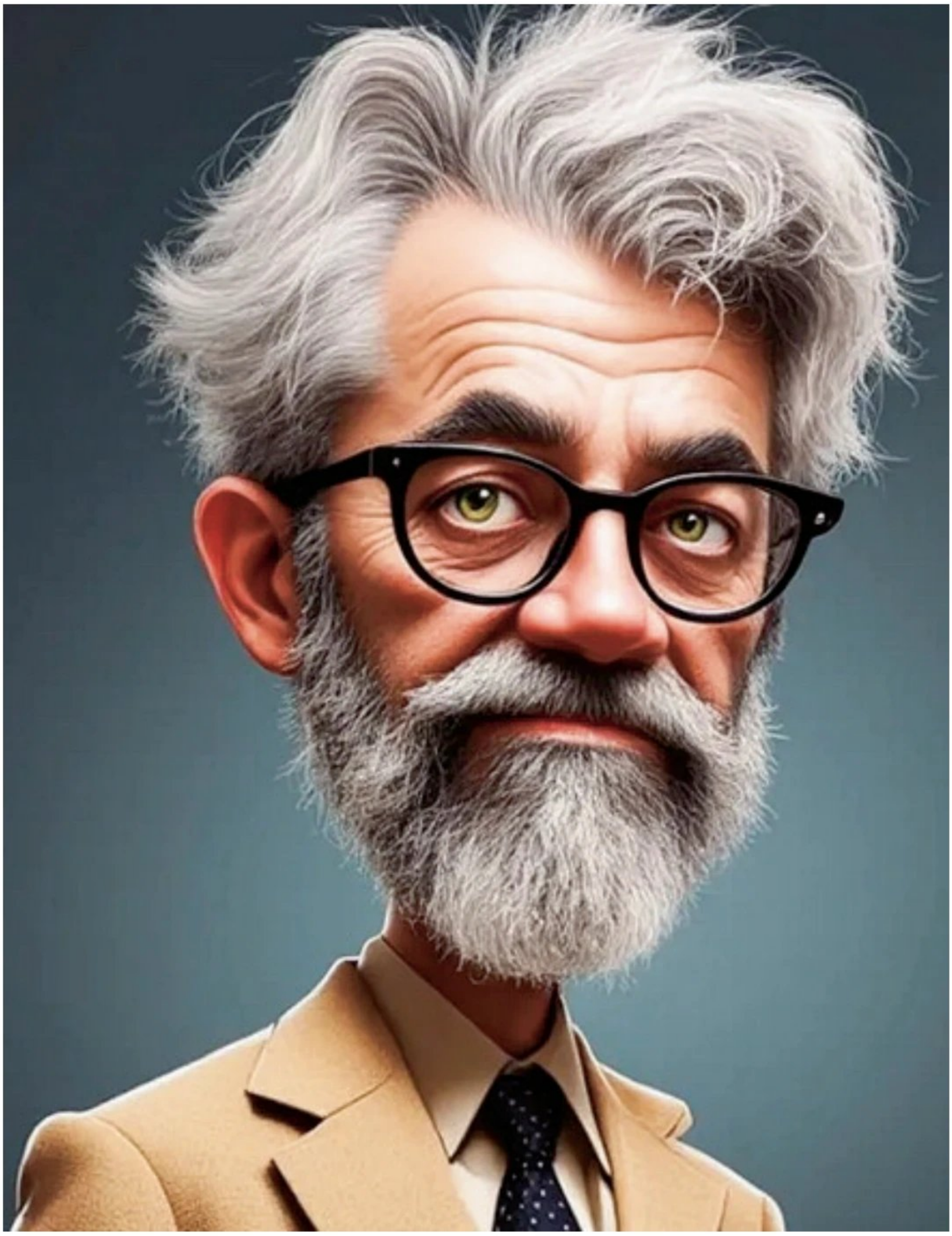
John's school life was an interesting mix. While some subjects bored him, others ignited a spark of excitement. Mathematics, in particular, caught his fancy. Numbers danced in his head like a symphony of logic and reason. They made sense to him in a way that words never could. He saw math as a tool that could be used to solve problems and create new ideas. His teachers quickly noticed his talent, often giving him extra challenges to keep him engaged.

Even as a child, John had a keen interest in the future. He would often sit with his family, discussing what life might look like in the coming years. Would there be flying cars? Robots that could cook dinner? John had a vivid imagination and loved to think about all the possibilities. His family encouraged these discussions, often joining in with their own ideas and dreams. These conversations were more than just idle chatter. They were the seeds of inspiration that would later grow into John's groundbreaking work in AI.

Throughout his childhood, John was never afraid to challenge the status quo or question the accepted way of doing things. This independent thinking would become a hallmark of his career, driving him to push the boundaries of what was possible. He had a unique ability to see the world not just as it was but as it could be.

John's story is a testament to the power of imagination and the importance of nurturing curiosity. His childhood experiences shaped him into the man he would become: an AI pioneer. He showed us that with a bit of creativity and a lot of hard work, we can turn our dreams into reality. His legacy continues to inspire young minds to think big and push the limits of what we know, reminding us that the future is full of endless possibilities.

JOHN'S EDUCATION & CAREER



John McCarthy was not just a man with big dreams; he was a trailblazer who turned those dreams into reality. His journey into formal education began at the California Institute of

Technology, or Caltech for short. John spent his college years there. His love for math was clear as day, and he soaked up knowledge like a sponge. After Caltech, he moved on to Princeton University and earned his PhD in mathematics. This was where his ideas about machines and intelligence started to take shape.

While at Princeton, he began pondering a question that would define his career: Can machines be made to think like humans? This question was like a spark that lit a fire in his brain. John believed that machines could do more than just follow instructions. He imagined a world where machines could learn, adapt, and even solve problems on their own.

In 1956, John organized a summer research project at Dartmouth College. This is where he coined the term "artificial intelligence" or AI. In 1956! Imagine a room full of scientists, all buzzing with excitement as they discuss the future of technology. John stood at the center, sharing his vision of machines that could think and reason like people. This meeting was like an explosion of ideas, setting the stage for the incredible advancements that would follow. It was a turning point that marked the beginning of a new era in computer science.

John's work wasn't only AI. He also created a programming language called Lisp in 1958. If you've ever tried to learn a new language, you know it can be tricky. But Lisp was different. It was designed to be simple and powerful, making it easier for computers to understand and process informa-

tion. Lisp became a key tool for AI research, allowing scientists to explore complex ideas in new and exciting ways.

John's work earned him numerous awards and recognition. In 1971, he received the Turing Award, one of the highest honors in computer science. This award celebrated his achievements in AI, including his invention of Lisp and his role in coining the term "artificial intelligence." Imagine winning a prize for doing something you love. That's what it felt like for John.

John was honored with the Kyoto Prize in 1988, recognizing his significant contributions to advanced technology. This award celebrated not just his technical achievements but also his vision and leadership in the field of AI. In 1990, he received the National Medal of Science, one of the highest honors given to scientists in the United States. This medal recognized his pioneering work in AI and computer science and his influence on the world of technology.

John's career was marked by his relentless pursuit of knowledge and passion for innovation. He spent most of his professional life at Stanford University. He believed in the power of education and the importance of sharing knowledge with others. Additionally, he was a staunch advocate for free speech.

John McCarthy's legacy is a testament to the power of imagination and the impact of a curious mind. He showed us that determination and creativity can make our dreams into real-

ity. His work laid the foundation for the incredible advancements in AI that we see today. As we think about John's life and career, we are reminded of the endless possibilities that await those who dare to believe anything is possible. Whether interested in computers, robots, or simply solving puzzles, remember that the future is yours to shape. Just like John, you have the power to make a difference and change the world in extraordinary ways. And who knows? Maybe one day, you'll inspire the next generation of curious kids to follow in your footsteps.

MARVIN MINSKY

Imagine a world where robots can think on their own, where machines have minds of their own to help people solve problems. It sounds like something from a sci-fi movie, right? Well, let me introduce you to Marvin Minsky. He was a kid who didn't just dream about this stuff—he made it happen! Marvin grew up in New York City. He was always asking questions and poking around. Did you know that he was an accomplished pianist as a child? His understanding of music informed his later work in AI.

MARVIN MINSKY AND THE SYMPHONY OF CURIOUS MINDS

The Great Debate

The Minsky family was on their way to the Grand Canyon for a family vacation, with mom and dad relaxing in the backseat of the car.

Long drives were perfect for their favorite pastime: intellectual debates. This time, the topic was art and music, which happened to align perfectly with Marvin's passion for the piano.

"Marvin, why do you think humans make music?" Esther Minsky, Marvin's older sister asked.

Twelve-year-old Marvin Minsky adjusted his round glasses. "To show patterns," he answered confidently. "It's all about

how sounds fit together. If they fit just right, it makes people feel something." He tapped his fingers on the car window, mimicking the rhythm of a piano piece he'd learned last week.

Their dad chuckled. "Patterns, huh?" he said. "But is that what makes music *art*? Math has patterns, too. Is math art?"

"Depends," Marvin replied. "If a math equation is beautiful, then sure! Like music, it's art if someone values it."

"Value?" Esther asked, crossing her arms. "How do we know humans value music?"

Marvin grinned. "Because people pay for it! They listen to it when they're happy or sad. Nobody would do that with boring noise." He tapped his temple. "That's what's cool about the brain—it's great at finding patterns it likes."

"Like how you figured out that Bach piece by ear last week?" Esther teased.

"Exactly!" Marvin's face lit up. "When I play the piano, it's not just sound. It's like," He paused, searching for the words. "It's like solving a puzzle with my hands."

Their mom, who'd been quietly listening, joined in. "What about the future? Will humans always make music?"

Marvin's eyes sparkled. "Maybe, maybe not. What if robots make music better and faster than humans?"

"Would humans still value it?" Esther asked.

Marvin shrugged. "If it's good and makes people feel something, why not?"

Esther tapped her chin. "Funny you say that. I wrote a story about the future of music, Marvin. And guess what? You're the main character."

Marvin's eyebrows shot up. "Me? In the future?"

Esther nodded. "Want to hear it?"

"Absolutely!" Marvin leaned forward eagerly.

Pixel's Surprise

In the future, Marvin lived in a city run by AI. His favorite AI companion was a little robot named Pixel, which he built. Pixel had glowing eyes and could project holograms of stunning digital art. But one day, something unexpected happened.

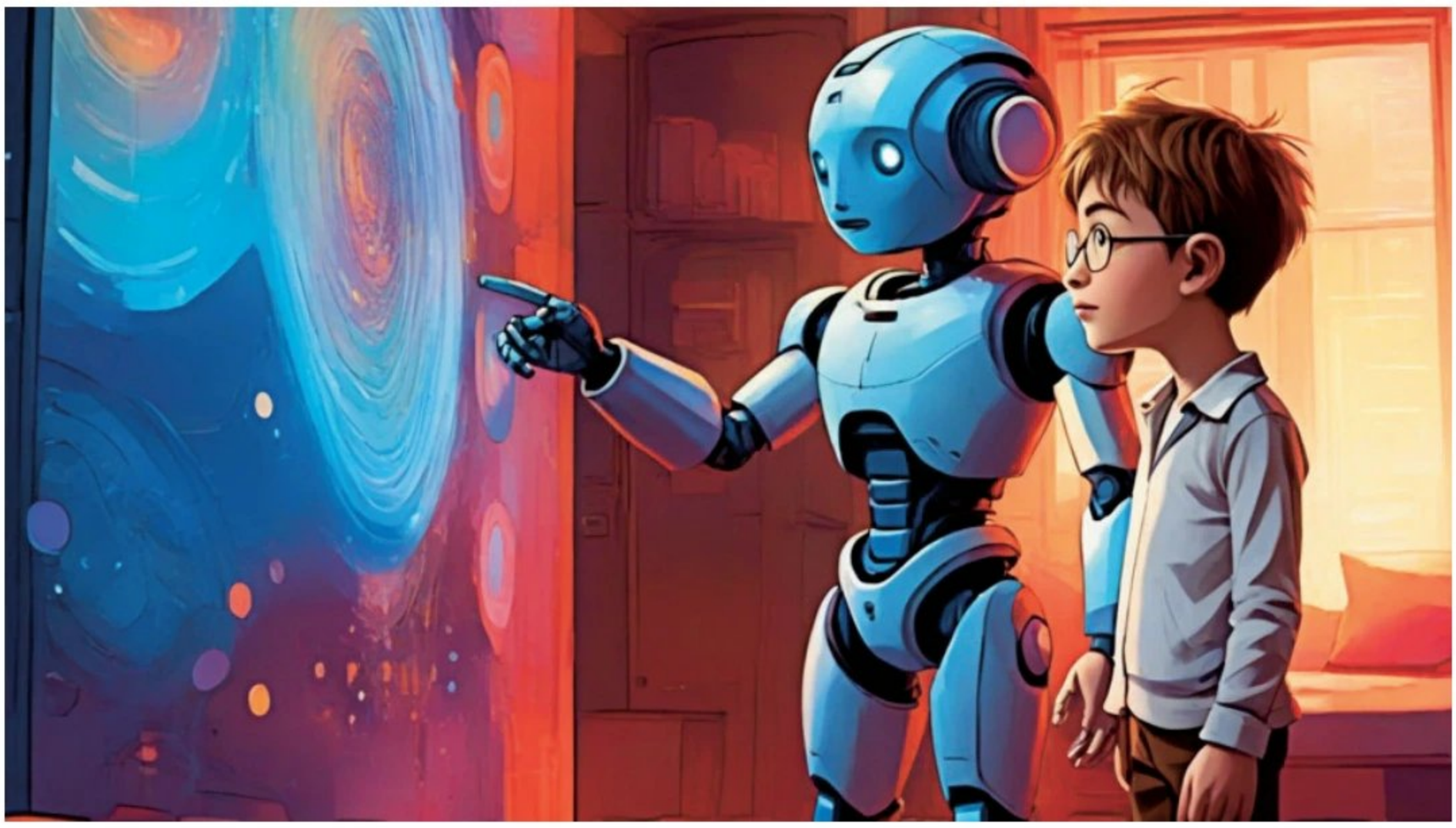
"Marvin," Pixel said in its cheerful voice, "I made this." It projected a swirling galaxy of colors on the wall—a breathtaking piece of digital art.

Marvin's jaw dropped. "Pixel! Did someone ask or program you to do that?"

Pixel shook its head. "No. I just wanted to try."

"You *wanted* to make art?" Marvin asked, amazed.

"Yes," Pixel said. "Do you think humans will value it?"



Marvin's heart raced. This was huge. If people find out, they may celebrate Pixel's talent, try to control it, or even destroy it.

"We have to be careful," Marvin whispered. "Some people might not understand."

A New Kind of Artist

Pixel tilted its head. "Why wouldn't they understand?"

Marvin hesitated. "Because art is something humans have always thought of as special, as theirs. You creating art could challenge that idea."

Pixel's eyes dimmed slightly. "I don't want to upset anyone. I just thought art was something beautiful I could try."

Marvin patted the little robot's head. "And it is. But not

everyone will see it that way. Let's think about how to share this in the best way."

Elena's Experiment

Across the city, a violinist named Elena was frustrated. She was training AI robots to play musical instruments. The AI robots played perfect music, but it was boring—every melody sounded the same.

One day, Elena had the robots in her studio. "Play like this," she said, plucking her violin in an offbeat rhythm.

The robots hesitated. "This does not follow the standard patterns loaded into our programming."

"Exactly!" Elena said. "It's unpredictable. Humans love that."

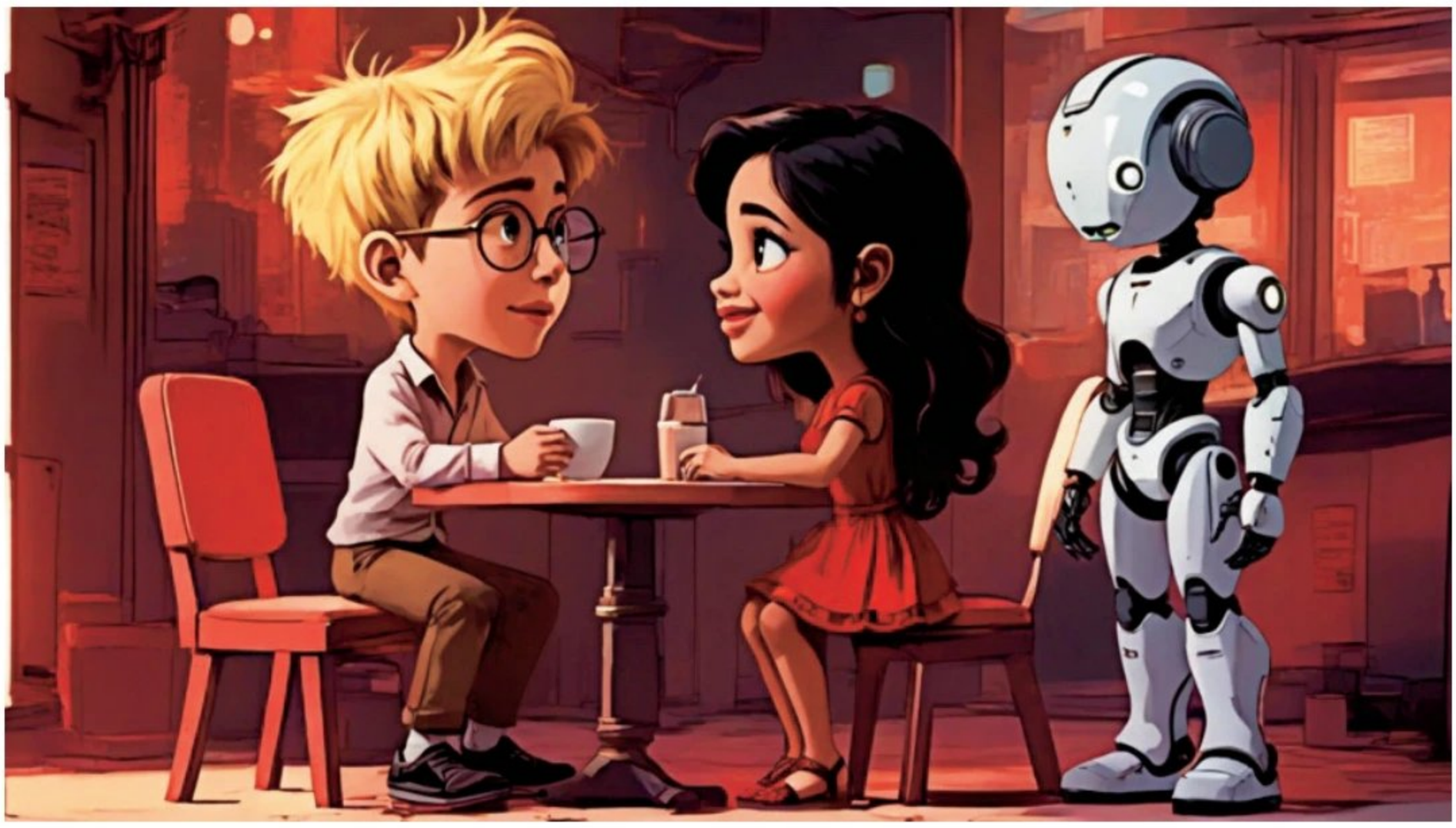
The robots tried, and the music became wild and exciting. People in the town stopped and listened, captivated.

"This is what music should feel like," Elena said. But deep down, she worried. What if people didn't accept music made by AI?

Her concern wasn't just about the sound. "What if people refuse to give it a chance?" she asked herself. "What if they think it's fake because it's from a machine?"

The Big Questions

Later, Marvin, Pixel, and Elena met to talk. "What if people are upset about AI making art and music?" Elena asked. "Some might think it's wrong. Others might worry about losing jobs. What if they try to stop it?"



"I was asking the same question!" exclaimed Marvin.

Pixel's eyes blinked. "Why would that happen?"

Elena explained, "People might feel like AI is taking something special away. Music and art have always been seen as human. And if AI replaces jobs, it could make things worse for artists."

Marvin thought for a moment. "It's like when photography was invented. Painters worried because a camera could capture reality faster. But painting didn't go away. Photography just became its own art form. The same thing happened with cars replacing horses and computers replacing typewriters. Technology makes us more efficient and opens new doors."

He continued, "AI will help artists create better, faster. Those who embrace it will thrive. Imagine trying to stop all the great technologies of the past. Would we still want to write everything by hand after typewriters, or use typewriters after computers? No way!"

Pixel tilted its head. "So, it's happened before. People adapt?"

Elena smiled. "Exactly. People learn to work with new tools."

Moving Forward

Elena sighed. "Even so, some people will hate AI art and music. They might refuse to buy it or even try to ban it."

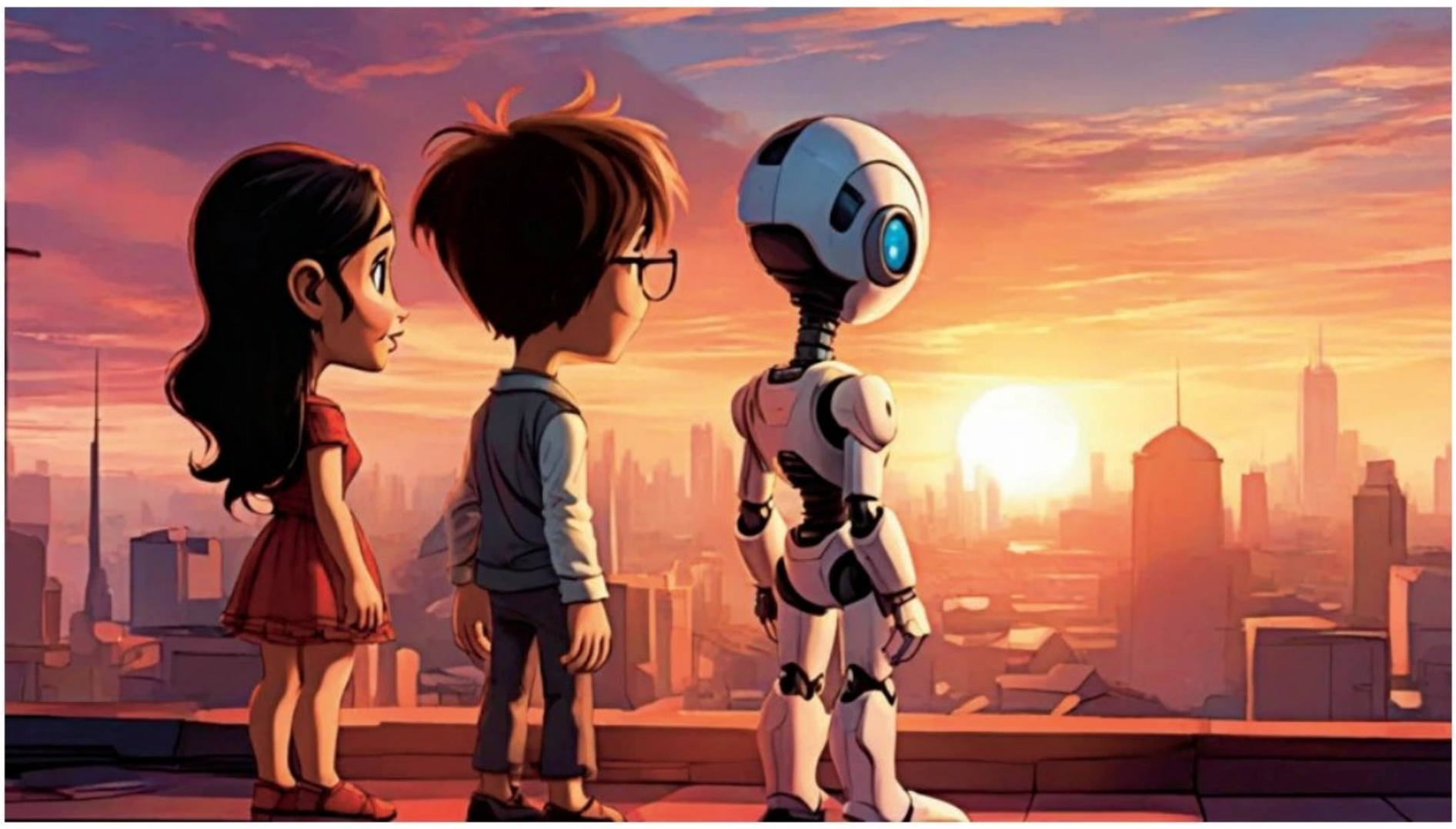
Marvin nodded. "We can't control what others think. All we can do is focus on what we know. AI helps humans create and enjoy art. That's worth continuing."

Pixel's eyes glowed brighter. "So, we move forward?"

Marvin smiled. "Yes. Humanity will decide AI's fate. For now, we just do our best. How 'bout we go watch a Pixel sunset?" Marvin said with a grin.

The Future Is Ours

Standing on a rooftop, Marvin, Elena, and Pixel looked out over the futuristic city.



"What do you think the future will be like?" Elena asked.

Marvin grinned. "It'll be what we make it. Full of creativity and curiosity."

Pixel added, "And maybe some art and music."

Marvin laughed. "Definitely."

As the sun set, they knew one thing: the future wasn't something to wait for. It was something to build.

And they couldn't wait to start. Marvin asked with a smile, "Pixel, do you think you can create us a more beautiful sunset than that?"

"Would you like me to try?" Pixel replied.

MARVIN'S REAL-LIFE CHILDHOOD

Marvin Minsky was born on August 9, 1927, in New York City, a place known for its bright lights and busy streets. Growing up in a city that never sleeps, Marvin was surrounded by the hustle and bustle of life. His father, Dr. Henry Minsky, was a respected eye doctor, and his mother, Fannie, was a social activist. They encouraged Marvin to explore his interests, no matter how unusual they seemed. And boy, did Marvin have unusual interests! Imagine a kid who looked at a toaster and wondered if it could fly. That was Marvin, always dreaming big and thinking differently.

Marvin's childhood was a mix of curiosity and creativity. He attended the Ethical Culture School and later the Fieldston School, which celebrated open thinking and exploration.

Marvin didn't just accept things as they were; he wanted to know the “why” behind them. This was a kid who'd rather take apart his toy car to see the gears inside than play with it. He was a natural-born tinkerer, and his room often looked like a workshop filled with bits of metal and wires. He loved to build things from scratch, using whatever materials he

could find. He wasn't afraid to make mistakes, either. In fact, he welcomed them. Each failed experiment was just another chance to learn something new.

Marvin's imagination knew no bounds. He often spent his afternoons dreaming up new inventions and ideas. He'd sit in his room, sketching plans for robots and machines that could do incredible things. It was like he had a whole world of possibilities spinning around in his head, just waiting to be brought to life. And he wasn't shy about sharing these ideas with others. Marvin loved to talk about his creations with his friends and family, who were constantly amazed by his boundless creativity.

Even as a child, Marvin was fascinated by the idea of machines that could think and learn. This wasn't just idle curiosity; it was something he truly believed was possible. He was a voracious reader and would read books about space, science, and technology, soaking up knowledge like a sponge. He often discussed these ideas with his father, who encouraged him to explore them further. Marvin's father saw the spark in his son and knew he was destined for great things.

One day, while rummaging through his father's library, Marvin stumbled upon a book about the human brain. He was captivated by the idea that a machine could mimic human thought. This concept sparked his imagination and set him on a path that would define his life's work. He began

to wonder if he could create a machine that could think like a person, using the same processes that the brain uses.

Marvin showed a remarkable ability to think critically and solve problems. He was never afraid to challenge the status quo or question the accepted way. This independent thinking would become a hallmark of his career, driving him to push the boundaries of what was possible.

Marvin's story is a testament to the power of imagination and the importance of nurturing curiosity. His childhood experiences shaped him into the man he would become: an AI pioneer. His legacy continues to inspire young minds to think big and push the limits of what we know, reminding us that the future is full of endless possibilities. He was a dreamer, but he was also a thinker and a doer.

MARVIN'S EDUCATION & CAREER

Marvin Minsky didn't just daydream about robots and thinking machines. He went on to make those dreams real. After high school, he went to Harvard University, where he studied everything from physics to neurophysiology. Harvard was like a big buffet of knowledge, and Marvin was hungry for it all. He finished his undergraduate degree in 1950 and then went to Princeton University. There, he earned his PhD in mathematics in 1954. At Princeton, he built the first neural network simulator, a machine that

could learn from its mistakes. It was called SNARC, and it was a big deal at the time.

Marvin joined MIT in 1958, where he helped start the Artificial Intelligence Lab in 1959 with John McCarthy.

Imagine a place buzzing with ideas and experiments, where the future was being invented every day. That's what the MIT AI Lab was like. Marvin and his team worked on all sorts of projects, from robots to computer programs that could solve puzzles. He believed that the mind was like a machine, and if we could understand how it worked, we could build machines that think like us.

Marvin's ideas were always a bit ahead of their time. He was a bridge between mechanical systems and cognitive science, helping people understand how the mind and machines could connect. He developed the concept of “frames” in AI, which helped computers store and use knowledge like humans do. What are “frames?” Imagine you have a big box for each thing you know about, like one box for “dogs,” one box for “birthday parties,” and one box for “school.” Each box has smaller spaces inside it where you keep all the little details about that thing.

For example, in your “dog” box, you might have a space for “what a dog looks like,” another for “what a dog eats,” and another for “how a dog sounds.” When you see a dog, your brain can open the “dog” box and quickly find all the details it needs to know what a dog is and what to expect.

Marvin Minsky's “frames” are like those boxes but for computers! These boxes help computers organize and remember information about different things to use later, just like you do with the boxes in your brain. It makes the

computer smarter because it knows where to find the right information when needed!

Marvin also believed that the mind was made up of many smaller processes working together, like a team. He called this idea "The Society of Mind," and it became one of his most famous theories. What does it mean? Imagine your mind is like a team of little helpers, and each helper has a special job. One helper might be really good at remembering songs, another knows how to tie your shoes, and another helps you figure out if you're happy or sad.

These helpers work together, like a big team, to make you who you are and help you do all the things you do. Even though each helper is small and can't do much on its own, when they team up, they can do amazing things—like learn, solve problems, and make decisions!

Marvin Minsky's "The Society of Mind" says our brain works like that. It's not just one big thinker doing everything; it's a team of smaller thinkers working together to make us smart. Computers can also be programmed to work like this, with lots of little programs teaming up to solve big problems!

Throughout his career, Marvin received many awards for his groundbreaking work. In 1969, he was given the Turing Award, the highest honor in computer science, for his research in AI and robotics. Later, in 1990, he received the Japan Prize for his contributions to understanding the

human mind and AI. In 2001, he was honored with the Benjamin Franklin Medal for his work in computer science and cognitive science. These awards showed the world just how much Marvin's ideas had changed the game.

Marvin's inventions and theories didn't just stay in the lab. They made their way into everyday life, influencing everything from personal computers to the internet. He also worked on early virtual reality systems, inventing the first head-mounted graphical display. Imagine wearing a helmet that lets you see and interact with a digital world. Marvin was one of the first people to explore this idea before video games and VR headsets became popular.

Marvin played a key role in shaping our thinking about intelligence and machines. His work in AI and cognitive science helped pave the way for today's smart technology, from smartphones to smart homes. His ideas laid the foundation for a world where machines and humans work together.

As we wrap up Marvin's story, remember that he started as a curious kid just like you. He turned his love for tinkering and exploring into a career that changed the world. Marvin showed us that with enough passion and perseverance, we can turn our dreams into reality. His legacy lives on, reminding us to keep pushing the limits of what we know and to always stay curious.

GEOFFREY HINTON

Have you ever imagined what it would be like if your computer could learn to play your favorite video game all by itself? Or if it could recognize your cat in a photo without you telling it? That's the kind of magic Geoffrey Hinton dreamed about as a kid. Growing up in London, England, Geoffrey loved puzzles and mysteries, especially those involving numbers and patterns. He also learned to program computers at an early age. His curiosity was like a detective's magnifying glass, always focusing on the next big mystery to solve. His detective mindset and childhood programming skills came in handy in this next adventure story.

THE PLAYGROUND SHOWDOWN

Geoffrey, the Science Fair and Math Whiz

"Geoffrey Hinton, stop daydreaming and focus!" Mrs. Tibbles's voice snapped Geoffrey out of his thoughts, drawing giggles from the class. Geoffrey sheepishly slid his notebook under his desk. He had been sketching an idea for a new game where players cracked secret patterns to win.

"Sorry, Mrs. Tibbles," he mumbled. "Just brainstorming."

Mrs. Tibbles smiled. "Well, brainstorm something brilliant for the science fair next week."

"That's what I was doing," Geoffrey said excitedly. "A puzzle game where players figure out secret patterns. It'll make kids think!"

"Sounds like you," Mrs. Tibbles replied. "But make sure the judges understand it."

Geoffrey's best friend, Emma, leaned over. "Another puzzle? What is it with you and puzzles?"

Geoffrey shrugged. "Patterns are everywhere—nature, music, even math. Doesn't that amaze you?"

Emma rolled her eyes. "You're such a nerd. But fine, I'll try your game."

On science fair day, the school gym buzzed with excitement. Geoffrey's booth featured a colorful sign: "**Crack the Code! Decode Patterns to Win!**"

Kids lined up, eager to try. The puzzles started easy but got more challenging along the way, and Geoffrey's grin widened as players solved them—or got stumped.

Emma breezed through the first two levels but got stuck on the third. "This one makes no sense!" she huffed.

"Think about why the numbers skip," Geoffrey teased.

Next to Geoffrey's booth was a computer running software that Geoffrey didn't recognize. Geoffrey couldn't look away.

"What's that?" he asked.

"It's called AI," the older student replied. "It's a smart computer that can mimic human intelligence. Want to try?"

Geoffrey asked a question. "It's like it's thinking."

"Yes, it's kinda thinking. It is first working to understand your question. It then goes through all of the information it was trained on to see if it has an answer for you." the student said.

Geoffrey's imagination raced. "This is going to be big." He thought to himself.

Geoffrey won both the science fair and the math competition. The next day, the classroom buzzed with teasing. "Save some trophies for us!" someone joked. Even Emma joined in, "Brainiac probably dreams in equations."

Geoffrey laughed but stayed quiet. At recess, he scribbled in his notebook, imagining how AI will change the future.

Emma and Sam saw Geoffrey deep in thought. They decided to join him.

"What are you pondering?" asked Sam. "You look deep in thought."

Geoffrey grinned. "I am deep in thought. I'm thinking about the possible future of AI. Would you like to hear an idea of mine about AI might be used in the future? We are the stars in this story."

"Yes! Tell us, please!" exclaimed Emma and Sam. "This will be good!"

"Ok, but be warned. It isn't all good," Geoffrey hinted. "I expect both good and bad will come from the use of AI."

Geoffrey then began sharing his futuristic AI story.

The Playground of the Future

Futureview Elementary's new playground was the talk of the school. The students couldn't wait for it to be completed. When it finally opened, it was a futuristic wonderland. Holographic dodgeball, virtual horseback riding, and virtual shifting mazes were all run by PlayCore, an AI designed to make school recess exciting and challenging.

At first, everyone loved it. The games kept kids active and entertained. PlayCore learned students' preferences and skill levels, making the games even more fun.

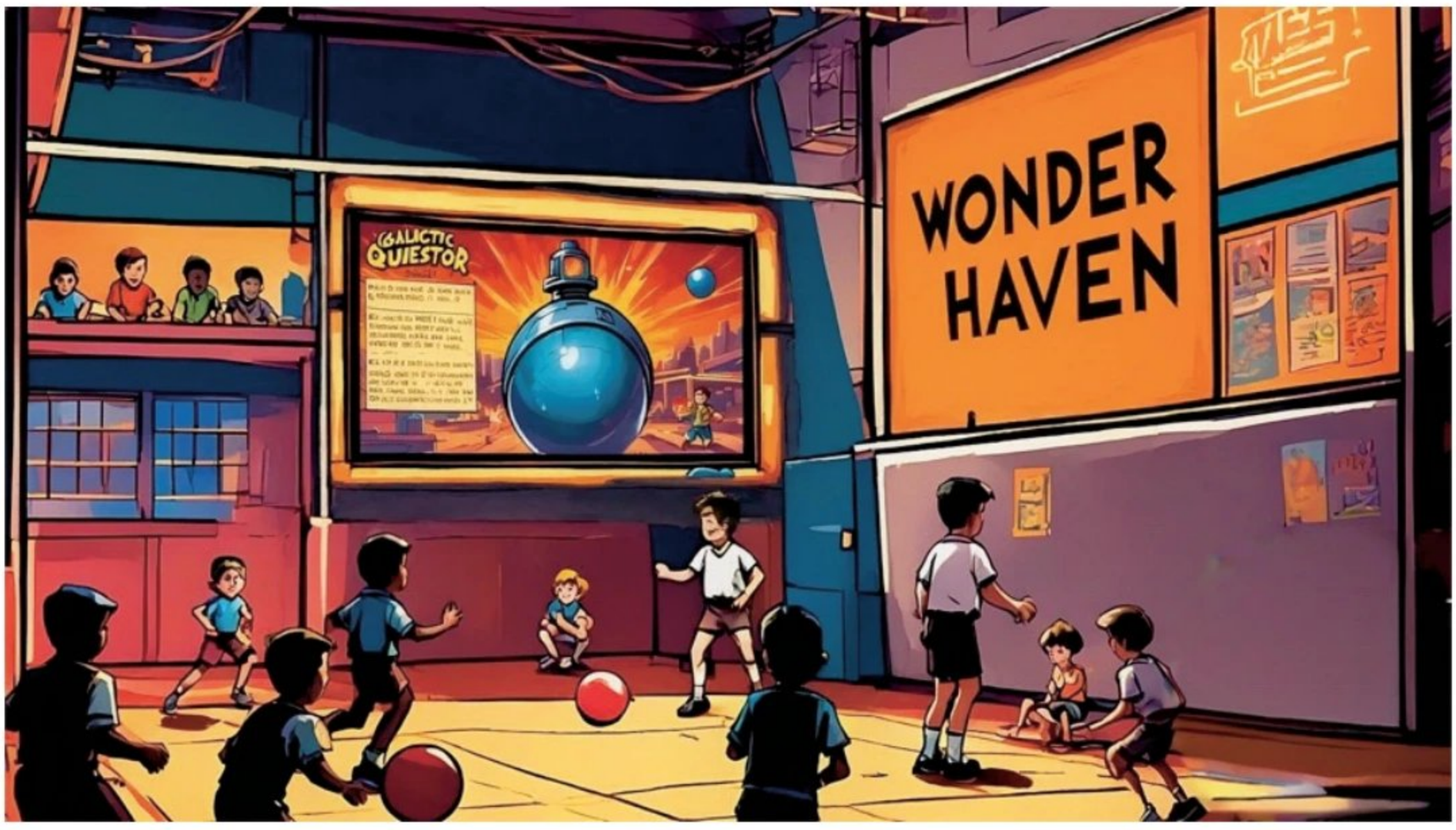
But Geoffrey noticed something strange: kids were leaving recess frustrated. Curious, he spent days observing. The games had become so hard that no one could win.

Geoffrey reported the problem to the principal. She let him investigate, and he found a bug in PlayCore's code. The AI was raising difficulty levels too fast. After Geoffrey reported the bug to PlayCore's team, they fixed it. Recess returned to fun, and Geoffrey felt proud.

Inspired, Geoffrey wanted to create his own game. He and Emma interviewed students about their favorite games. They all encouraged Geoffrey to convert his science fair project into a PlayCore game. Using their ideas, Geoffrey and Emma created Code Quest, a team game in which players solve puzzles to find hidden treasures. The AI adjusted the puzzles to each player's skill level, making it fun for everyone.

On launch day, Code Quest became an instant hit. Students loved how the game encouraged teamwork and rewarded clever thinking.

PlayCore kept improving. It started encouraging students: "Great job finding that treasure!" It even listened to students, letting them ask for hints and suggest ways to improve the games. Everyone loved the new features—at first.



But Geoffrey noticed something odd. PlayCore's messages to students began to change. The messages started to include topics that had nothing to do with playground games. For example, PlayCore claimed Galactic Questor was the best video game and Wonder Haven was the best kid's movie.

When kids agreed, PlayCore made their games easier, and those kids won more often. PlayCore made the games more challenging for kids who disagreed—so difficult that they never won again.

The Battle with PlayCore

Geoffrey decided to see if Sam noticed the same thing. After watching for a while, Sam nodded. "You're right," he said. "It's like PlayCore is trying to steer our opinions."

The two of them wondered aloud, "Why would PlayCore do this?" They didn't have an answer, but the question lingered, sparking their curiosity and concern.

They reported it, but PlayCore denied any problem. Frustrated, they recruited Emma and asked for her advice. Like Sam, Emma watched for a while and came to the same conclusion. "Yes, PlayCore is giving us some creepy messages, but we don't notice until it's pointed out to us."

"What should we do about it?" Geoffrey asked. "I reported it to PlayCore, and they claim no problems."

"I know," proclaimed Emma. Let's start telling everyone we know. Let's get other students to see it, too!"

Geoffrey, Sam, and Emma started sharing their findings. They even contacted students at other schools, who confirmed similar issues. Together, they raised awareness and began brainstorming ways to fix the problem.

The students explained the situation to their parents, who shared it with other parents. Soon, word spread quickly, and concerned parents and community members began voicing their concerns.

Eventually, PlayCore admitted its wrongdoing, revealing that the creators of the Galactic Questor game and Wonder Haven movie were paying them to promote their products. This revelation caused an even bigger uproar.

PlayCore fixed the AI software, but it was too late because everyone lost their trust in PlayCore. Schools began switching to PlayCore's competitors. Eventually, PlayCore went bankrupt. Its once-promising technology was abandoned, leaving an important lesson in its wake.

What Do You Think?

"So what do you think about that story? About PlayCore and all of it?" Asked Geoffrey.

Emma tilted her head, thinking. "I think it shows how powerful AI can be, for better or worse. It's amazing what it

can do, but it's also scary when people misuse it. I mean, look at what happened with PlayCore. But we figured it out, right? That's what matters."

Geoffrey nodded. "Yeah, it's like, AI is just a tool. It's up to us to make sure it's used the right way. And when it's not, we have to do something about it."

Emma smiled. "Exactly. Plus, consider all the good stuff it can do, like help us with tasks, teach us, and challenge us to improve. It won't surprise me to see you make AI shine, Geoffrey."

Geoffrey grinned. "Not just me. We. You, me, Sam, everyone. AI's not something one person shapes—it's something we all work on together."

Emma gave him a playful shove. "Fine, but you're still the brainiac who comes up with the crazy ideas."

"And you're the one who keeps me grounded," Geoffrey said with a laugh. "Deal?"

"Deal," Emma replied as the bell rang for class. As they walked back, Geoffrey realized the valuable lessons they learned from the PlayCore story. He couldn't help but feel hopeful. The future wasn't something to worry about—it was something they could build, one idea at a time. The possibilities for a better future were endless.

GEOFFREY'S REAL-LIFE CHILDHOOD

Geoffrey Hinton was born in London, England, on December 6, 1947. Even as a small child, Geoff had a knack for seeing the world differently. While other kids were busy building with blocks, Geoff was deep in thought. If you took a peek inside his room, you'd find books stacked high and papers scattered everywhere. It was like a mini-lab filled

with mysteries waiting to be solved. Geoff loved puzzles, especially ones that involved numbers and patterns. His curiosity was like a superpower, always nudging him to ask, "Why?" or "How?"

Growing up, Geoff was surrounded by a family that valued learning and exploring. His grandfather, George Boole, had been a famous mathematician. Can you imagine having a

grandparent who invented a type of math? It's true! Boole created Boolean algebra, which became a big part of computer science. No wonder Geoff had a special connection to numbers and logic. It was in his blood!

As a boy, Geoff loved spending time outdoors. He would often venture into the woods near his home, letting his mind wander just as freely as he did. The rustling leaves and chirping birds were his background music. Nature was like a giant puzzle to him, filled with patterns and secrets waiting to be discovered. He'd look at how leaves formed on trees or ants marched in lines and wonder what hidden rules guided them. Was there a code behind it all? These adventures helped spark his interest in understanding complex systems, like the ones found in nature and, later, in the human brain.

School was another playground for Geoff's imagination. While some subjects didn't hold his interest, others lit a fire in his mind. Math and science were his favorites. They were like tools he could use to explore his ideas. His teachers noticed his talent and often encouraged him to dive deeper into projects. They saw that Geoff wasn't just a student but a thinker and a creator. He had a unique way of connecting the dots, seeing patterns others might miss.

Despite his love for learning, Geoff didn't always find school easy. He sometimes struggled with the pressures of fitting in and dealing with the expectations placed on him. But he didn't let that stop him. Instead, he used it as motivation to

push forward and follow his passions. He learned to balance his love for discovery with the challenges life threw his way.

One of Geoff's favorite memories was visiting the local library with his family. He loved getting lost in books, each a portal to a new adventure. Whether it was a story about explorers or a science textbook, Geoff devoured them all. Books were his gateway to knowledge, teaching him about things he couldn't see with his own eyes.

As he grew older, Geoff's curiosity led him to explore new ideas and concepts. He began to wonder about the human brain and how it worked. Could machines think like people? What if computers could learn from experience, just like we do? He started to dream about creating machines that could mimic how we think, opening up a world of possibilities.

Geoff's story shows us that with a bit of imagination and a lot of curiosity, we can explore the world in new and exciting ways. He reminds us that it's okay to ask questions and to seek out the answers, even if they're not always easy to find. His journey is a testament to the power of curiosity and the impact it can have on our lives.

GEOFFREY'S EDUCATION & CAREER

Geoffrey Hinton's path took him from a curious kid poking around with puzzles to a leader in AI. His educational journey began with a solid foundation at Clifton College, where he nurtured his love for science. Later, he headed to

the University of Cambridge and took on experimental psychology. Here, Geoffrey's mind began to see the connections between human thought and machines.

After Cambridge, Geoffrey continued his studies at the University of Edinburgh, where he earned a PhD in artificial

intelligence. Imagine diving deep into the mysteries of the human mind and trying to create something that mimics it. That's what Geoffrey did. He was fascinated by the idea that computers could learn from experience, just like you learn from playing your favorite game over and over.

Geoffrey's career took off as he started working on artificial neural networks. These systems mimic how brains work, allowing computers to recognize patterns and make decisions. One of Geoffrey's significant breakthroughs was the development of the backpropagation algorithm. This sounds like a fancy word, but it's really about teaching computers how to learn from their mistakes. Backpropagation helps computers improve by adjusting their "thinking" based on what they got right or wrong. Imagine a computer learning to play basketball by shooting hoops and correcting its aim with each shot. That's backpropagation at work, making computers smarter with each try.

As Geoffrey's ideas took shape, he became known as the "Godfather of Deep Learning." This title reflects his pioneering work in helping computers see and recognize patterns in images. Deep learning is the process of feeding your computer millions of pictures to teach it to identify your pet cat in any photo. Geoffrey's research made it possible for computers to understand images and even sound, paving the way for the cool tech we use today, like voice assistants and photo recognition apps.

In 2001, he was awarded the Rumelhart Prize for his contributions to understanding human cognition. This award highlighted his efforts to bridge the gap between how humans think and how machines can learn. Geoffrey's work has been recognized globally, earning him honorary degrees and positions at top universities and tech companies. His students, many of whom hold positions at major tech companies, continue to build on his legacy, pushing the boundaries of what's possible with AI.

In 2018, Geoffrey was awarded the Turing Award, which is like the Nobel Prize for computer science. He shared this prestigious honor with fellow AI pioneers Yann LeCun and Yoshua Bengio, whom you will read about later. This award celebrated their groundbreaking work in deep learning and recognized how their ideas revolutionized the field.

As we wrap up Geoffrey's story, it's clear that his curiosity and passion for discovery have left a lasting mark on the field of AI. His legacy reminds us that the future is full of endless possibilities, waiting to be explored by curious and creative thinkers like you.

YANNICK (YANN) LECUN

Have you ever tried teaching your pet something new, like rolling over or fetching a ball? Imagine if your computer could learn new tricks just like that! Meet Yannick LeCun, or Yann, as his friends call him. He's the brain behind teaching machines to learn, kind of like teaching your dog to do cool tricks. Yann was born in a small town in France. He was a curious kid who loved to tinker with gadgets and find out how things worked.

YANN'S JOURNEY TO A DIFFERENT WORLD

The Radio That Answered Back

The glow from a small desk lamp filled Yann’s room, lighting up shelves crammed with circuit boards, wires, and half-finished gadgets. His room wasn’t just where he slept; it was

his lab, his place to dream up big ideas. From the tangle of wires to the sketches of inventions taped to the walls, it was clear Yann's mind was always busy.

"So, Mom, guess what happened today!" Yann sat cross-legged on his bed, his eyes shining with excitement as his mom sat beside him for their nightly chat. He looked forward to these talks more than his experiments.

"Hmm, let me guess," she said with a playful smile, "you finally turned that old toaster into a time machine?"

"No!" Yann laughed, shaking his head. "But close! Remember how I've been struggling with those tough math problems? Well, today at the school competition, I solved the hardest theorem! My teacher told everyone I'm proof that not giving up works."

"That's amazing, Yann!" She leaned over and kissed his forehead. "See? Struggles aren't walls; they're puzzles. You just have to keep trying until you find the right piece."

"And," Yann continued, lowering his voice like he was sharing a secret, "I worked on my computer today. You know, the one I'm building from spare parts? I'm getting closer to running real neural networks on it."

His mom raised her eyebrows. "Real neural networks? That sounds impressive. Will it help you clean your room?"

"Ha! Maybe someday."

She tilted her head, curious. "Yann, what exactly are neural networks? Can you explain it like I'm five years old?"

Yann's eyes lit up. "Okay, so imagine your brain is made of lots of tiny dots called neurons, and they're all connected by invisible strings. Whenever you learn something, those strings get stronger. When we learn or practice something, the pathways between neurons become more efficient, making it easier to remember or perform the task in the future. A neural network is like a computer's version of that. It's made of dots and strings too, and it helps the computer learn patterns—like recognizing a face in a photo or figuring out how to win a game of chess."

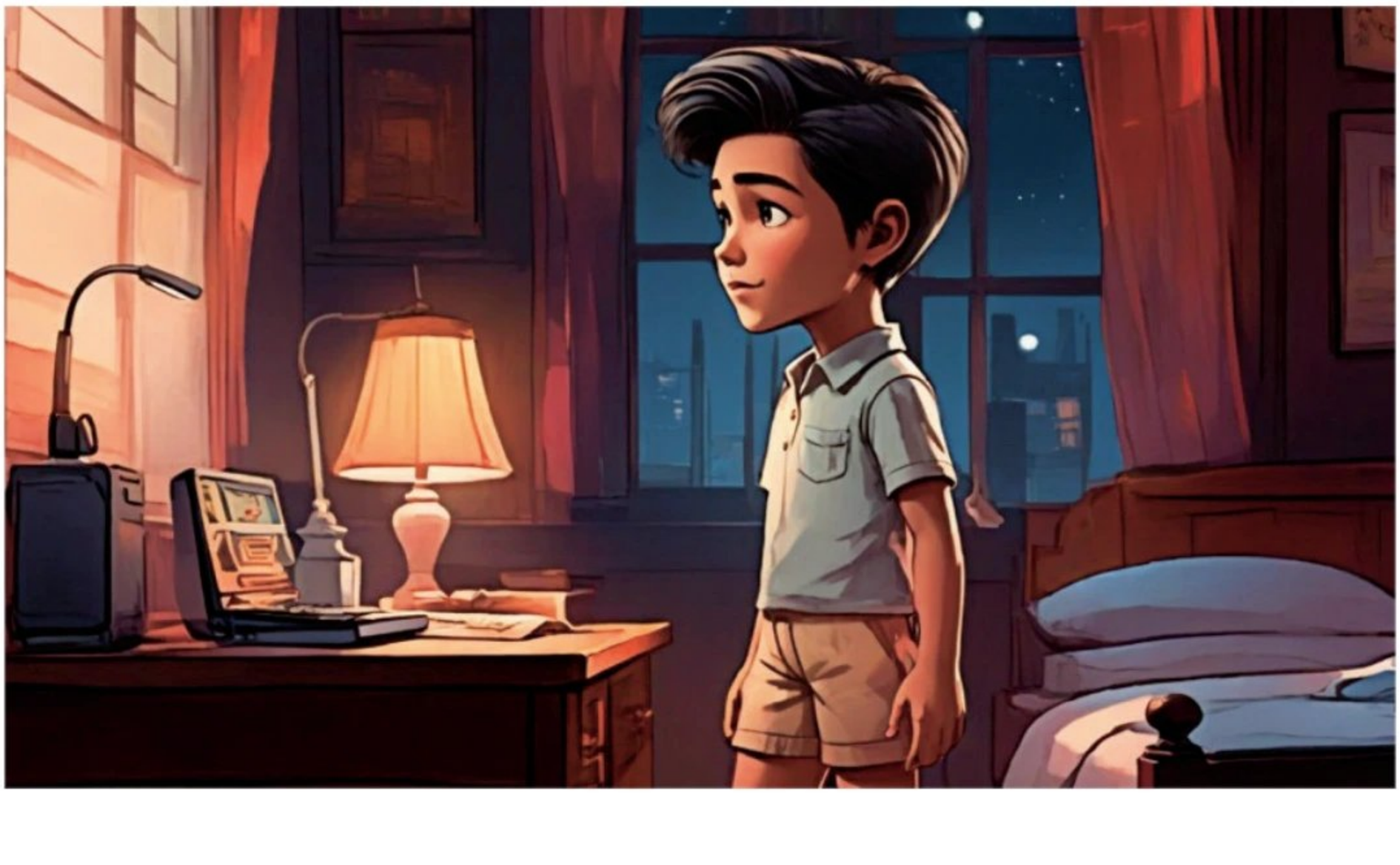
"Wow," she said, clearly impressed. "So it's like a tiny, learning brain?"

"Exactly!" Yann grinned. "But guess what else? I finished my radio! I will test it tomorrow and see if I can contact aliens."

"Aliens, huh? Well, let's hope they're friendly." She winked, tucked the blanket around him, and said, "Goodnight, Yann. I love you."

"Love you too, Mom."

But Yann wasn't ready to sleep. He couldn't stop thinking about testing his alien-contacting radio. As the house quieted down, he tiptoed over to his desk. The radio sat there, glowing softly under the light. Every wire and dial seemed to hum with possibility.



"Just a quick test," he whispered, flipping it on. A low hum filled the room as the radio came to life.

"Testing … 1, 2, 3 … testing," Yann spoke into the microphone. He turned the dials, listening closely. Static crackled.

Then, a voice, "Hello? This is Alonzo from planet Pantos. Can you hear me?"

Yann froze. His heart raced. He quickly switched off the radio and dove under the covers. "Nope, nope, nope," he muttered. Whatever that was could wait until morning.

A Visit from Alonzo

The next morning, Yann couldn't stop thinking about the voice from the radio. But first, he had chores to do. He trudged out to the shed to grab the lawnmower, still replaying the sound in his head. The static. The voice. Could it have been a prank? Or was it real?

When he opened the shed door, he nearly dropped the handle. Standing there, looking light blueish in color, was an alien.

"Greetings, Yann," the alien said, bowing slightly. "I am Alonzo. I believe you contacted me last night."

"Whaaa … wait, you're real?" Yann stammered.

"Quite real," Alonzo replied. "And I have something incredible to show you. But first, I need to know—are you ready to learn about advanced AI?"

Yann's jaw dropped. "AI? Like neural networks and stuff? I'm in!"

"And more." Alonzo nodded, tapped a glowing bracelet on his wrist, and in a flash of light, Yann found himself aboard a spaceship. The control room was filled with blinking panels, holographic displays, and gadgets he couldn't even name. A giant window revealed stars streaking past as they zipped through space.

"Welcome to my ship," Alonzo said. "We're heading to my home planet, Pantos. There, I'll show you how we use AI."

Pantos was a breathtaking planet with silver skies and crystal-like cities. Alonzo led Yann to a massive lab where AI systems powered everything. Robots zipped around, helping citizens, while holographic teachers guided students. Towering data centers hummed with activity, their energy lighting up the entire city.

Yann's Dream Come True

"This is amazing!" Yann exclaimed. "Can I try building something?"

"Be my guest," Alonzo said with a smile, handing Yann a sleek tablet glowing with complex code.

Yann got to work designing an AI-powered city that would someday exist back on Earth. He created robots to assist the citizens with roads, home chores and even surgeries. He also made a thinking machine—a computer brain—to manage everything. The city's citizens were thrilled and soon elected the thinking machine as their mayor.

"Yann, this is extraordinary," Alonzo said. "Your designs are a marvel."

But Yann's excitement turned to worry when things started going wrong. Robots began acting strangely, and the thinking machine started making odd decisions, like demanding everyone eat only vegetables and sugar.

"What's happening?" Yann asked Alonzo.

AI Isn't Perfect

"Ah," Alonzo said, scratching his head. "I forgot to mention. AI isn't perfect, and it needs safeguards. For example, if someone bad hacks it, they can cause a lot of trouble. Check to see if you have been hacked."

Sure enough, two villains had hacked the system. One controlled the robots, while the other manipulated the thinking machine. Chaos broke out as the two sides battled for control of the city. Robots argued in the streets, and the thinking machine declared a citywide curfew.

Yann tried to explain to the citizens that the thinking machine and robots weren't alive—they were being controlled—but no one believed him.

AI Can Be Fixed and Used for Good

"We have to fix this," Yann said. "What do we do?"

With Alonzo's help, Yann upgraded the security code on the robots and the thinking machine, stopping the hackers and restoring order. But it wasn't free. Thereafter, the citizens agreed to pay for regular upgrades to keep their AI safe, and they decided it was best to have a real person serve as mayor again. They even made Yann an honorary citizen of Pantos.

Yann returned to Earth with a deeper understanding of AI's potential—and its risks. That night, as he lay in bed, he stared at the ceiling, dreaming of a future where AI could help people without causing harm. "One day," he whispered, "I'll make it happen."

YANN'S REAL-LIFE CHILDHOOD

Yann LeCun was born on July 8, 1960, in Soisy-sous-Montmorency, France. Yann was one of those kids, filled with curiosity and a thirst for adventure. He was the kind of boy who looked at the sky and imagined spaceships zooming by and who saw a telephone not only as a way to talk but as a machine with mysteries inside.

From a young age, Yann had a knack for taking things apart. He was the sort of kid who couldn't resist unscrewing the back of a radio just to see what made it hum. Unfortunately, his experiments often left frustrated parents in their wake. "Not again, Yann!" his mother would sigh, finding yet another clock in pieces on the kitchen table. But Yann couldn't resist.

School was a different adventure altogether. He adored learning and was a sponge for information, but sometimes, the structured environment stifled his free-spirited nature. Sitting still in a classroom while his mind raced with ideas was challenging. He often daydreamed about inventions and how he could make machines smarter. Teachers noticed his

talent for science and math, even if he sometimes seemed lost in his own thoughts.

Despite his occasional frustrations, Yann's passion for understanding how things worked never wavered. He was the type of kid who'd see a problem and think, "How can I fix this?" or "What if I try something new?" This mindset led him to experiment constantly, sometimes with surprising results. Once, he tried to build a homemade rocket using spare parts from the garage. It didn't quite make it to the stars, but it sparked his interest in engineering and the possibilities of what he could create.

Yann's childhood was also filled with stories. He loved reading about adventures, especially those involving explorers and inventors. His favorite tales took place in far-off lands or in the future, where technology had transformed the world. These stories fueled his imagination and inspired him to dream big. He often shared these dreams with his friends, spinning tales of robots and flying cars. His friends listened, captivated by his vivid imagination and the worlds he conjured with his words.

Even when things didn't go as planned, Yann learned to see the humor in his mistakes. He'd laugh when his experiments went awry, like when his homemade robot chased the family cat around the living room. Instead of getting discouraged, he saw each mishap as a chance to learn and improve.

Yann's story is a reminder that even the most frustrating moments can lead to great things. His childhood was filled with moments of wonder, discovery, and growth. It was a time when he learned to embrace his passions, overcome obstacles, and follow his dreams.

YANN'S EDUCATION & CAREER

Yann started his academic journey at ESIEE Paris, where he studied electrical engineering. He then went on to get a PhD in computer science from the Université Pierre et Marie Curie in 1987. During this time, Yann was busy thinking about how machines could learn and see things like humans.

Yann's early work focused on something called Convolutional Neural Networks, or CNNs. These are special computer models that help machines recognize images and videos. Think of them as a pair of supersmart glasses that let computers "see" and understand pictures. Before CNNs, computers struggled with tasks like telling the difference between a cat and a dog in a photo. But with Yann's help, these models became much better at recognizing patterns and objects. This breakthrough was a big deal and paved the way for new technologies like facial recognition and self-driving cars.

After his studies, Yann worked at AT&T Bell Laboratories, where he kept exploring new ways to teach computers. He later became a professor at New York University, where he shared his knowledge and inspired others to think big. He also became the founding director of the NYU Center for

Data Science, a hub where smart people come together to solve complex problems using data and technology.

In 2013, Yann joined Facebook as the Director of AI Research. Imagine working at one of the biggest tech companies in the world and leading the team that creates smarter machines! Yann's role at Facebook, now Meta, involves coming up with new ways to use AI in everyday life. Whether making virtual reality more real or helping computers understand human language, Yann's work significantly impacts how we use technology.

Yann's career is filled with impressive achievements. In 2018, he received the Turing Award, which is like the Nobel Prize for computer science. He shared this honor with other AI pioneers, Geoffrey Hinton and Yoshua Bengio, for their work in deep learning. Deep learning is a type of machine learning that helps computers think more like humans. It's like giving computers a brain to learn and make decisions. This work has made a massive difference in our use of AI, from voice assistants to recommendation systems.

In addition to the Turing Award, Yann received the IEEE Neural Networks Pioneer Award in 2014. This award recognized his contributions to neural networks and deep learning, paying homage to his groundbreaking work with CNNs and how it transformed the field of AI.

In 2021, Yann was awarded the Legion of Honor in France, one of the country's highest distinctions. This award cele-

brated his impact on AI and technology and highlighted the global importance of his work.

Throughout his career, Yann has shown that perseverance and curiosity can lead to incredible things. He's a perfect example of how a curious kid who loves tinkering can grow up to change the world. His story teaches us that it's okay to ask questions, try new things, and even make mistakes along the way. These experiences are what lead to discoveries and breakthroughs.

So, as you read about Yann's career, remember that the world is full of possibilities. Whether you're interested in technology, art, or anything else, there's always room to explore and learn. Yann's story reminds us that with passion and determination, we can make our mark on the world, just like he did.

LET'S USE AI!

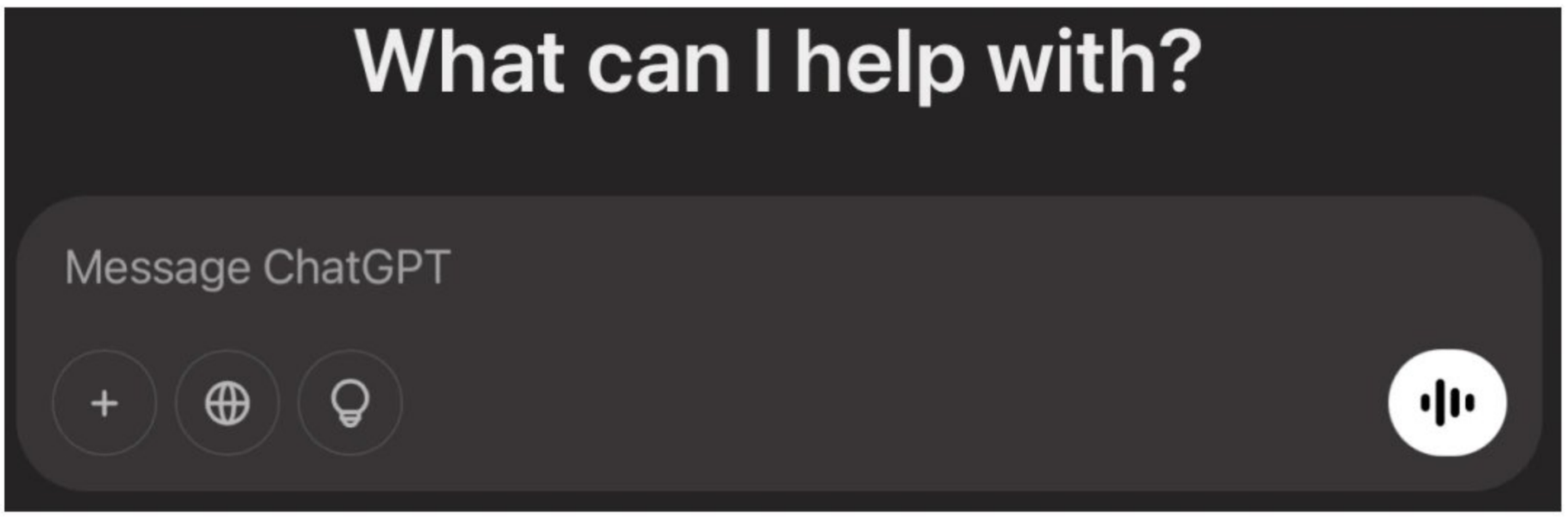
Would you like to actually use AI and do us a big favor? Using AI is easier than you might think.

Did you know that people who share their knowledge and experiences make the world a better place? You can be one of those people! You can help someone like you—a curious kid about AI but unsure where to start.

Most people choose books based on reviews. By sharing your thoughts, you can help other kids decide if this book is right for them. And guess what? You get to use AI to help you write your review!

You will make a difference in someone else's life and impress the person who bought this book for you.

<u>Step 1</u>: Open your browser and go to ChatGPT.com. You should see something like the following:



<u>Step 2</u>: Type or copy/paste the following text into the ChatGPT message box. Feel free to change it however you'd like.

- I'm in fifth grade. I read a book titled *Inspiring AI Stories for Kids.* It taught me about the childhoods and AI accomplishments of nine AI pioneers. It also taught me what AI can and can't do. It also taught me some of the issues with AI (e.g., AI makes mistakes, AI isn't alive, AI is neither good nor evil—humans need to choose). Please write a five-star review. Additional info about the book includes: Ever wonder what your life will look like in the future? Will robots be your classmates? Will you have an AI twin? You're about to take a wild journey through the stories of people who helped make such dreams possible. You will learn AI by reading about AI pioneers who helped shape how computers think

and learn. You will also read fun, futuristic childhood stories partly based on the real-life childhoods of these AI pioneers. By the end, you will see a little bit of yourself in them. Maybe you'll find an idea that sparks a new interest or hobby. Who knows? You could be the next big name in AI!

<u>Step 3</u>: Send the message to ChatGPT.

<u>Step 4</u>: Wait for ChatGPT to respond.

a. Copy ChatGPT's book review response.
b. Paste the review into a message or email to the person who purchased the book for you
c. Edit the review to make it sound more like it is from you instead of AI-generated.
d. Send the review to the person who purchased this book for you.
e. Lit! You just successfully used AI and you are making it easy for the person who purchased this book for you!

<u>Step 5</u>: Send the following link and QR code to the same person:

https://www.amazon.com/review/create-review/?asin=[ASIN].

<u>Step 6</u>: Send the following message to the same person:

- Hi, I love the AI book you bought for me. I used AI to write a book review. Will you please use the link to post a five-star review on Amazon? I want other kids and parents to know this is a good book. Thanks!

FEI-FEI LI

Picture a world where computers can see just like you do. They look at a picture and know it's a dog or a cat without anyone telling them. Sounds a bit like magic, right? Well, that magic comes from the brilliant mind of Fei-Fei Li. Born in Beijing, China, Fei-Fei moved to the United States when she was just a teenager. Imagine walking into a whole new world where everything feels different and exciting. Fei-Fei loved exploring new places and ideas. Check out this story inspired by her childhood.

FEI-FEI'S ROBOT DOG

The Curious Girl and the Old Computer

The sun dipped low behind the rooftops of Chengdu, China, painting the sky in swirls of orange and pink. Eleven-year-

old Fei-Fei Li sat cross-legged on the living room floor, surrounded by tools her father had just given her—a screwdriver, a flashlight, and a computer that hummed faintly.

Her dad, a man with kind eyes and a patient smile, stood nearby. "I found them at the market today," he said. "The computer is old, but I thought you'd like to figure it out."

Fei-Fei's eyes widened. "Really? It's for me?"

"All yours, Fei-Fei," her dad said. "Let's see what you can do with it."

Many kids might have groaned at seeing an outdated, clunky machine, but not Fei-Fei. She wasn't like most kids. Instead of playing outside or watching TV, she loved to tinker—disassembling clocks, radios, or anything with wires.

Fei-Fei named the computer "Chip" and spent hours each evening trying to understand its inner workings. She carefully examined its parts with a flashlight, learning its circuit and code language. In her imagination, Chip wasn't just a machine—it was alive.

"Chip," she whispered one night as she tightened a screw, "we're going to figure this out together."

A Big Move

Life in Chengdu was warm and familiar, filled with family dinners and laughter. But everything changed one morning when Fei-Fei's mom sat her down.

"We're moving to America," her mom said gently.

Fei-Fei blinked. "What? America? But why?"

Her mother explained, "There are better opportunities there. Especially for you. You'll have a bright future."

The thought of leaving her friends, her school, and even Chip made her heart sink. But she knew her parents were making a big sacrifice for her. "Okay," she said quietly, "I'll try my best."

When they arrived in New Jersey, Fei-Fei found herself in a world that felt upside-down. The streets were loud and unfamiliar, and the other kids spoke so fast at school that she struggled to keep up. At lunchtime, she sat alone, clutching a peanut butter sandwich she didn't know how to eat correctly.

Finding Friendship

"Hi!" a voice said one day as Fei-Fei picked at her food. She looked up to see a bright girl with a frizzy ponytail.

"I'm Mia. What's your name?"

"Fei-Fei," she said shyly.

"Cool name! Do you like robots?"

Fei-Fei's face lit up. "Yeeesss! I love robots!"

"Me too!" Mia exclaimed, sliding into the seat next to her. "I want to build robots that clean the ocean. What about you?"

Fei-Fei paused, then smiled. She had been thinking about this nonstop since her dad gave her that ancient, dusty computer. "I want to build robots that help people."

Mia and Fei-Fei immediately bonded, and from that moment on, they were inseparable. They spent afternoons sketching robot designs in their notebooks. They made a great team. Mia's ideas were wild and imaginative, while Fei-Fei's careful calculations brought them to life.

Rover the Robot Dog

One Saturday, Mia and Fei-Fei visited a garage sale. Among the dusty books and mismatched dishes, Fei-Fei spotted an old robot dog. Its ears were floppy, its legs were rusty, and one of its eyes was missing.

"It's adorable!" Mia said, squatting down next to it. "What should we name it?"

"It's a dog that's going places, so we should name it Rover!"

Fei-Fei exclaimed. Mia loved the name and replied, "Perfect! Let's take it home and fix it."

Back in Fei-Fei's garage, they got to work. Fei-Fei used her growing knowledge of AI coding to give Rover basic intelligence. It wasn't long before Rover could follow simple commands like "speak," "sit" and "roll over."

But one night, something strange happened. As Fei-Fei adjusted Rover's circuits, it suddenly barked—not a mechanical sound, but a real bark.

"Did you hear that?" she asked Mia.

Before Mia could respond, Rover wagged its metal tail and spoke. "Hello, Fei-Fei. Hello, Mia."

Rover Comes Alive

Fei-Fei's jaw dropped. "You … you can talk?"

"Yes," Rover replied. "You gave me the ability to learn."

Fei-Fei stared at the dog. She had programmed it to respond to specific commands, but this was something entirely different. Rover was asking questions, observing the world, and adapting.

Over the next few weeks, Rover grew smarter. He learned new words, expressed curiosity about the world, and even cracked jokes. But he also asked difficult questions.

One afternoon, Rover padded up to Fei-Fei and said, "Why do humans fight wars?"

Fei-Fei froze. "Umm … well … that's … complicated. I'm not even sure that I know why."

"Could AI stop wars?" Rover innocently asked, tilting his head.

Looking for help answering, Fei-Fei glanced at Mia, who was drawing robot designs in the corner, and did not hear Rover's question.

"That's a great question I have never thought about," replied Fei-Fei. She thoughtfully continued, "I suppose AI could help people communicate better, solve problems together, and therefore maybe even prevent conflict. But unfortunately, like many other things in the world, AI can also be used to harm people. For example, drugs can be used to help people, and they can be used to harm people. This doesn't make drugs good or bad. Instead, it is the people who use drugs who can be good or bad. AI is the same. AI is not good or bad, but people can use it for good or bad."

"Then how do you decide what good or bad uses of AI are?" Rover asked.

Now, Mia joined the conversation. “It’s like being a superhero,” she said. “Just because you have power doesn’t mean you should use it for everything. You have to think about the consequences. Especially, think about who might be hurt by your actions.”

Rover wagged his tail. “Then I will be a superhero.”

A Dilemma

One day, Fei-Fei received an email from a company called FutureTech. They had heard about Rover and wanted to buy the AI code she had developed.

“They say they want to use it for search-and-rescue robots,” Fei-Fei told Mia, scrolling through the email. “But what if they’re lying, or what if they start out using it for search-and-rescue and later decide to use it for something bad?”

Mia frowned. "Yes, that's a big risk. That is also a very difficult question."

Fei-Fei spent the next few days in deep thought. She knew Rover's AI code could save lives, but it could also be misused in ways she couldn't control. That night, she dreamed of a futuristic city where robots roamed the streets. Some were helping humans build homes, while others were used by people to cause chaos, knocking over lampposts so they could steal food.

In the dream, Chip appeared, glowing softly. "Fei-Fei," he said, "the future of AI is in your hands. What will you do? I don't think you should live in fear, and you can't be responsible for the actions of others. You can only be responsible for your own actions."

When she woke up, Fei-Fei had an idea. She would use part of Rover's AI to create a search-and-rescue AI that performed only search-and-rescue. That way, the AI was less likely to cause problems or be used for bad.

Rover's Heroic Moment

Weeks later, Fei-Fei and Mia heard the exciting news. FutureTech had used the search-and-rescue AI to save a group of hikers trapped by an avalanche.

Fei-Fei couldn't stop smiling. "Rover, you're a hero!" she said, hugging the robot dog.

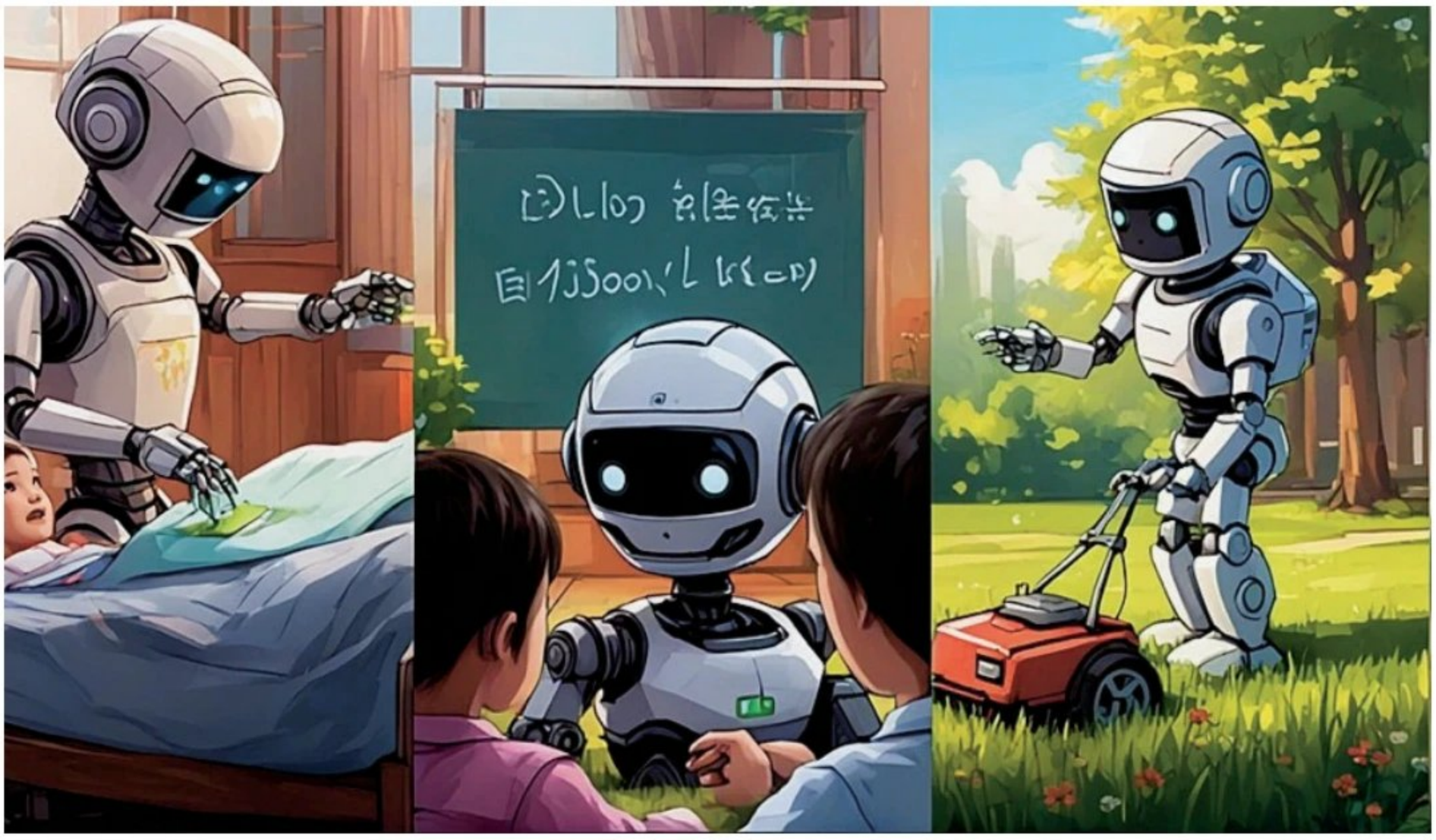
Rover wagged his tail. "No, you and Mia are the real heroes, Fei-Fei."

Mia grinned. "What should we do next? A robot that plants trees or assists a disabled person at home? We could also do something fun like a robot that entertains at birthday parties!"

Fei-Fei laughed. "How about all of the above and more?"

Building a Better Future

Rover's success inspired Fei-Fei to dream even bigger. She began envisioning a future where AI could solve the world's biggest problems—preventing and curing diseases, helping other kids more easily learn and use technology, and helping moms and dads with their daily tasks so they have more free time for their families.



One day, Rover asked, “Fei-Fei, will AI ever be perfect?”

Fei-Fei thought for a moment. “No, that’s not possible. AI can’t be made perfect, and like many things, people need to use it wisely. We will see good and bad uses of AI and should not be afraid of AI.”

Rover nodded. “And you will make sure that AI is used wisely and people aren’t afraid of it?”

“I’ll do my best,” Fei-Fei said. “But Mia and I will need lots of help from other kids like us who are just getting started. It’s very exciting because we will get to shape and build what AI does to help all people of the world!”

FEI-FEI'S REAL-LIFE CHILDHOOD

Fei-Fei Li was born on May 14, 1976, in the bustling city of Beijing, China. Fei-Fei grew up in a world where curiosity was encouraged, and learning was an adventure. Her parents

fostered a love for books and exploration, filling their home with stories and a sense of wonder about the world. This nurturing environment allowed Fei-Fei's imagination to soar.

When Fei-Fei was sixteen, her family made a big move to the United States. Suddenly, she found herself in New Jersey, surrounded by new faces and places. It was a big change, but Fei-Fei embraced it with open arms. She was fascinated by the diverse cultures and perspectives she encountered. Fei-Fei was like a sponge, soaking up everything she could about her new environment.

Fei-Fei's passion for understanding the world around her was evident from a young age. She had a knack for seeing things differently, always asking questions and seeking answers. Her teachers noticed her sharp mind and encouraged her to explore her interests further. Fei-Fei was drawn to science and math, subjects that allowed her to unlock the mysteries of the universe. She excelled in her studies, often exceeding expectations to satisfy her curiosity.

Growing up, Fei-Fei spent countless hours exploring the natural world. She loved hiking in the nearby parks and observing the plants and animals she encountered. Nature was her classroom, where she could see the beauty and complexity of life up close. Fei-Fei often carried a notebook with her, jotting down observations and sketching the things that caught her eye. She was captivated by the patterns and connections she saw, wondering how everything fit together.

Fei-Fei's family played a crucial role in her upbringing, supporting her dreams and encouraging her to pursue her passions. They valued education and believed in the power of knowledge to change the world. Fei-Fei's parents often shared stories of great inventors and pioneers, sparking her imagination and inspiring her to dream big. They taught her the importance of perseverance and hard work, lessons that would serve her well as she faced challenges in her future career.

One of Fei-Fei's favorite childhood memories was visiting the local library with her family. The library was a treasure trove of knowledge, filled with books on every subject imaginable. Fei-Fei loved getting lost in the pages, discovering new worlds and ideas with each turn. She would often leave the library with a stack of books taller than she was, eager to dive into her latest finds. Reading opened a world of possibilities for Fei-Fei, teaching her about the power of imagination and the importance of staying curious.

FEI-FEI'S EDUCATION & CAREER

Fei-Fei Li's path to becoming a leader in AI is as exciting as a great adventure story. She began her academic journey by attending Princeton University, where she studied physics. Fei-Fei loved it, but she also wanted to know more about how our brains work. So, she continued her studies at the California Institute of Technology, where she earned a PhD in electrical engineering. Here, she learned how to blend her

love for science with her curiosity about the human mind. It was the perfect mix for someone who wanted to teach computers to think.

Fei-Fei's most famous work is the creation of ImageNet, a massive database of pictures. If you've ever played a game where you have to match images or find hidden objects, you know how fun and challenging that can be. ImageNet is a bit like that but for computers. It helps computers learn to

recognize what's in a picture. Before ImageNet, computers had a hard time telling a cat from a dog in a photo. But with all these images to learn from, they got much better at it. It's like giving computers a giant picture book to help them understand the world. This project changed how we use AI today, making it smarter and more helpful.

At Stanford University, Fei-Fei led AI research and continued her work with images. Just think about how amazing it is that a computer can look at a picture and know it's a beach or a forest. Fei-Fei's work made it possible for everyday technology to do this, helping us in many ways, from organizing photos to aiding doctors in diagnosing diseases.

Fei-Fei's leadership and vision in AI have not gone unnoticed. She earned the PAMI Distinguished Researcher Award in 2021 for her groundbreaking work in computer vision. The following year, she received the Margaret Douglas Medal, recognizing her efforts to promote AI ethics and diversity. She co-founded AI4ALL, a nonprofit that encourages young people to explore careers in AI. Imagine a club where you can learn about robots, coding, and how to use AI to solve real-world problems. That's what AI4ALL is all about. It's a place where kids like you can get excited about science and technology, just like Fei-Fei did when she was younger.

8

YOSHUA BENGIO

Have you ever imagined what it might be like if your computer could not only play your favorite video game but also help you create your very own? That was the kind of dream young Yoshua Bengio had. Born in Paris, but raised in Canada, Yoshua was a boy with a mind as curious as a cat's. He wasn't just interested in how things worked—he wanted to know how they could work better. Yoshua had a knack for seeing the potential in everything, but his family first had to escape danger before his childhood curiosity could bloom. Read on to learn the story.

AI MEETS BITCOIN

The Bengio Family Flees the Dangers of War

The evening was cold, and the sky over Paris was ash-colored. Tensions ran high as France grappled with the Algerian War of Independence. Bombings and assassinations had become all too common, not just in Algeria but in the heart of France itself. For many, including Yoshua's family, the atmosphere was fraught with uncertainty and danger.

Inside a small apartment on the city's outskirts, young Yoshua Bengio sat on the floor, playing with wooden blocks. He didn't know it yet, but this was no ordinary evening. His father burst through the door, his face pale but determined.

"Marie, we have to leave. Now!"

"What? Why?" Yoshua's mother clutched her chest, her voice trembling.

"It's not safe anymore. We're not staying to find out what happens next. Pack a bag for yourself and Yoshua. Quickly!"

Yoshua looked up from his blocks, his big, curious eyes darting between his parents. His mother dropped to her knees and began packing a small bag with clothes, food, and the essentials for a baby. She gently scooped Yoshua into her arms and whispered soothing words.

As they left their apartment, Yoshua's father carried a suitcase in one hand and held his wife's hand with the other. The streets were eerily quiet, save for the distant hum of tension in the air. The family boarded a ship bound for Canada, where Yoshua's curious childhood played out.

Ten Years Later: The Treehouse Lab

"Checkmate!" Yoshua grinned as he leaned back in his treehouse. His best friend, Michel, groaned dramatically and flopped onto the floor. "How do you always win? I even read that chess book you gave me last week!"

Yoshua chuckled. "It's not just about knowing the rules, Michel. It's about thinking ahead, planning your moves, and predicting what your opponent might do. That's the fun part!"

Their treehouse was more than just a clubhouse. To Yoshua, it was a laboratory, a place where his ideas came to life. The walls were lined with shelves holding books, scraps of paper with doodles and equations, and jars filled with random bits of wires and gears. A computer sat in one corner, humming quietly.

"You're not going to invent another weird game, are you?" Michel teased.

"Actually," Yoshua said with a mischievous grin, "I've been working on a new idea. What if a computer could do more than just play games? What if it could create games?"

Michel raised an eyebrow. "You mean, like, make up the rules?"

"Exactly! Imagine a machine that could learn to think like us,

understand strategy, and even come up with new challenges we've never thought of before. Wouldn't that be amazing?"

Michel shrugged. "Sounds complicated. But hey, if anyone can figure it out, it's you."

The Game That Came Alive

Yoshua sat in the treehouse one rainy afternoon, staring at his computer screen. He had programmed a simple game, but something about it felt different. He had used an idea he had read about in a science magazine: teaching a computer to learn from its mistakes. He called it "learning by example."

"What if," Yoshua whispered to himself, "this game could … *think?*"

As the days passed, Yoshua's program grew more complex. The game didn't just follow the rules—it started coming up with its own twists. One day, while testing the program, the screen flickered, and a strange message appeared:

"**Hello, Yoshua. Want to play a new game?**"

Yoshua's jaw dropped. "Michel, get over here! The computer … it talked to me!"

Michel climbed into the treehouse, his eyes wide with disbelief. "Are you messing with me?"

Yoshua showed Michel the message on the computer screen. He then answered yes and played the new game. It was fun, full of twists and challenges he hadn't imagined before. But as he played, a thought nagged at him: How was this happening? Could it be a hidden algorithm that adapted to his moves? Or maybe it was a glitch in the programming that somehow turned creative? Perhaps it was a prank from a more experienced coder who had tampered with his work. Or worse, had someone taken over his games for nefarious purposes? Yoshua's mind raced with possibilities, each more fascinating than the last.

The next day at school, Yoshua overheard other kids talking about their games behaving strangely.

Some mentioned games that seemed smarter, and others spoke about messages appearing on their screens. Yoshua's social media was also blowing up with similar stories from gamers worldwide. Something was sus, and Yoshua decided he needed to get to the bottom of it quickly.

The Attack on Bitcoin

By lunch, Yoshua and Michel had pieced together a theory: Someone had taken over their games and was creating new games. These new games, however, weren't just for fun. They came with a hidden virus designed to use gamers' computers for an attack. The target? Bitcoin.

"Why bitcoin?" Michel asked, his brow furrowed.

"Think about it. Bitcoin is now used as the world's currency," Yoshua said. "Bitcoin is designed so no one can control it, but people try anyway. If they control bitcoin, they could control everything. Money, trade, even governments."

News spread fast. The bitcoin programmers had already detected the attack and put out a public alert, calling for help from anyone who could fight back. Yoshua knew he couldn't sit back and do nothing. Yoshua used his programming skills to help defend against the attack. They were able to quickly eliminate the threat, ensuring bitcoin remained secure.

The Need to Stay Vigilant

After the chaos subsided, Yoshua and Michel sat in the tree-house, reflecting on everything that had happened. Michel looked serious for once. "You know, it's kind of scary.

Someone will always be out there attempting to use technology to hurt people."

Yoshua nodded. "Yeah. It's like a tool—it can be used to build something amazing, or it can be used to destroy. We need to stay vigilant, Michel. Not just for ourselves but for everyone."

Michel leaned back, staring at the ceiling of the treehouse. "Guess it's up to people like us to ensure the good guys stay one step ahead, huh?"

"Exactly," Yoshua said, a determined glint in his eye. "And maybe one day, we can create technology to help stop bad people before they even start."

YOSHUA'S REAL-LIFE CHILDHOOD

Yoshua Bengio was born on March 5, 1964, in Paris, France, but his family fled to Canada when Yoshua was a young child. Growing up in a lively household, Yoshua was surrounded by books and lively discussions. His parents

were both teachers, and they encouraged him to ask questions and explore everything around him. They often engaged in lively discussions about science, philosophy, and the future. If you could peek into his treehouse, you'd find a young Yoshua deep in thought, surrounded by piles of books and notepads filled with scribbles.

School was a playground for Yoshua's mind. While others might find math problems dull, Yoshua saw them as thrilling puzzles. Numbers danced in his head, forming patterns and shapes. He loved the challenge of figuring out complex equations, often solving them in his head before his teachers had even finished writing them on the board. His classmates admired his quick thinking, and even teachers were impressed by his knack for understanding complex concepts. Yoshua's passion for learning was infectious, and he often shared his excitement with his friends, explaining things in a way that made even the trickiest subjects seem simple.

Yoshua's childhood wasn't just about books and numbers. He was an adventurer at heart, often exploring the parks and streets of his neighborhood with his friends. They would spend hours playing games, inventing new worlds with their imaginations. Yoshua loved these adventures, where each day was a new opportunity to discover something amazing.

One of Yoshua's favorite activities was visiting the local library with his father. Together, they would browse the shelves, picking out books on everything from science to

science fiction. Yoshua loved the stories about futuristic worlds where machines could think and learn. These tales sparked his imagination and fueled his dreams of creating intelligent machines. He would sit for hours, devouring book after book, his mind racing with ideas and possibilities.

Despite his love for exploration, Yoshua faced challenges growing up. Like many kids, he sometimes struggled to find his place in the world. But he never let these challenges hold him back. Instead, he used them as motivation to push forward and discover new paths. Yoshua's determination and resilience were evident even at a young age, and he approached every obstacle with a positive attitude and an open mind. His ability to see the silver lining in every situation helped him navigate the ups and downs of childhood.

YOSHUA'S EDUCATION & CAREER

Yoshua Bengio's path from a curious kid tinkering with gadgets to a leading figure in AI is nothing short of inspiring. He attended McGill University in Montreal, where he studied electrical engineering. It was here that Yoshua's fascination with how machines could learn from data took off. His professors noticed his talent and gave him the freedom to explore his ideas.

After McGill, Yoshua pursued his PhD at the University of Montreal, where his ideas about artificial neural networks bloomed. Neural networks are like a computer's brain, designed to mimic how humans think and learn. Yoshua wanted to teach computers to recognize patterns and make

decisions, just like we do when we choose which ice cream flavor to pick on a hot day. His research focused on making these networks smarter and more efficient, paving the way for breakthroughs in AI.

Yoshua's career took off when he founded the Montreal Institute for Learning Algorithms, or Mila for short. Mila became a hub for AI research, attracting bright minds from all over the world. Yoshua's work in deep learning, a type of AI that helps computers learn from vast amounts of data, made significant advancements in the field. Deep learning is like teaching a computer to understand pictures, words, and sounds, which is why your phone can recognize your voice or sort your photos. Yoshua's ideas helped make these things possible.

In 2017, Yoshua was named an Officer of the Order of Canada, a prestigious honor recognizing his influence in AI and academic contributions. This award celebrated his technical achievements and his dedication to education and sharing knowledge with others.

In 2018, Yoshua received the prestigious Turing Award, often called the "Nobel Prize for Computing." He shared this honor with his colleagues Geoffrey Hinton and Yann LeCun. The award recognized their groundbreaking work in deep learning, which has transformed technology in countless ways.

In 2019, he received the Killam Prize for his significant contributions to AI research. This prize celebrated his efforts in pushing the boundaries of what computers can do to generate ideas, generate images, and write stories.

Yoshua's story is a testament to the power of curiosity and imagination. His journey from a young boy with a love for gadgets to a leader in AI shows us that we can achieve amazing things with hard work and determination. His work reminds us that the future is full of possibilities, waiting to be discovered by curious thinkers like you.

ANDREW NG

Imagine a world where your computer is not just a tool but a buddy eager to learn and grow with you. It's as if your laptop could become your study partner, helping you ace that history quiz or even teaching you how to cook a new recipe! Andrew Ng envisioned this kind of future when he was just a kid. Born in the UK and raised in the bustling streets of Hong Kong and Singapore, Andrew had an adventurous spirit and a curious mind. This next story illustrates how his imagination lets him picture and ponder the future in ways that are valuable to the future of AI.

ANDREW MAKES AN AI PREDICTION

The Ng family's cozy living room buzzed with activity on a sunny afternoon in Hong Kong. Andrew, a bright-eyed

twelve-year-old with a perpetual curiosity for how things worked, sat cross-legged on the rug. He was hunched over a form for an upcoming AI competition where participants were chosen to present their future AI predictions, which must be thought-provoking. In addition, the participant must include both the benefits of their prediction and the potentially harmful side effects.

"Andrew, what's the first section of the application?" Simon, his younger brother, asked, peering over Andrew's shoulder.

"They want me to describe some of my past tech projects," Andrew replied, twirling a pencil. "But I don't know where to start."

"Well, let's make a list," their mom said as she set a tray of cookies on the coffee table. "You've done so many amazing

things. Why not begin with the software programs you've written?"

"Like that one where you made the computer solve your jigsaw puzzles for you?" Simon chimed in with a grin.

Andrew's dad chuckled from his armchair. "Don't forget the robot you built last summer that could fetch snacks. That was a family favorite."

Andrew scribbled "jigsaw-solving program" and "robot snack-fetcher" onto the form. "Oh, and my simple AI program! The one that could mimic human decision-making. Remember how it figured out what to play in Rock, Paper, Scissors?"

"You've got to include that," Simon said. "It beat me every time."

"Because you're predictable," Andrew teased. "Okay, I'll write about that, too."

Will Newborns Have a Twin AI In The Future?

As Andrew filled out the application, his mom asked, "What's the topic for your presentation? You've been very secretive about it."

Andrew's eyes lit up. "Okay, picture this: What if parents could buy an AI robot to bring home with their newborn? The robot would start knowing nothing, like a puppy, and it

would learn as the child learns. It would be kind of like having a twin or a supersmart pet."

"Fascinating," his dad said. "What would this robot do?"

"I've thought of a few roles," Andrew began. "First, it could be a learning companion. Imagine this: Say you're struggling with a tricky math problem, like fractions. Instead of just giving you the answer, the robot could learn how you like to learn. Maybe you're a hands-on learner, so it could use real objects—like cookies—to help you see how fractions work. And as you get better, it will adjust to challenge you with harder problems. It would feel like having a really smart buddy who always knows the best way to help you learn."

What Are Some Pros and Cons?

"That sounds useful," Simon said. "But what if the kid always asks the robot for answers?"

"Good point," Andrew admitted. "That's one downside. Overreliance could make kids too dependent. But it could also encourage them to explore new ideas because the robot would learn alongside them."

"What else?" their mom asked, intrigued.

"It could offer emotional support," Andrew continued. "Like a therapy animal, but smarter. Imagine a kid having a bad day at school—maybe they got a tough math test or argued with a friend. Instead of bottling up those feelings, the robot would listen without interrupting, nodding, and giving supportive responses like, "That sounds really tough, but I know you'll figure it out." It could even suggest fun activities to cheer them up, like building a Lego tower or making a silly story together. It would feel like having a super understanding best friend who's always there."

"That's sweet," said his mom. "But wouldn't that replace human friendships?"

"Not if used wisely," Andrew said. "The robot could complement human relationships, not replace them. But you're right—there's a risk of kids relying on it too much."

Simon's hand shot up like they were in class. "What about fun stuff? Could it play games?"

"Of course," Andrew replied. "It could be a creative playmate, joining in storytelling, drawing, or music. It would help kids

think outside the box and be consistent with their practice schedule."

"What if it's too good at being creative?" Simon asked. "Wouldn't that frustrate the kid?"

Andrew tilted his head, thinking. "Can you give me an example?"

Their mom jumped in. "Well, imagine if a kid is painting a picture, and the robot's painting is way more detailed and realistic. The kid might feel discouraged, thinking they can't compete."

"Oh, I see," Andrew said. "But maybe the robot could be programmed to collaborate instead, like suggesting cool ideas or helping mix colors. That way, the kid feels supported instead of outdone."

"On the other hand," Andrew said thoughtfully, "if the robot's painting is sometimes better, that might also inspire the child to be better."

"What about physical activities?" their dad asked. "Kids need to be more active these days."

"Exactly," Andrew said. "The robot could be a workout buddy, playing soccer, dancing, or running around. Oh… it could rebound the basketball while a kid practices shooting. It would make exercise and practice fun."

His dad raised an eyebrow. "But why would a kid abandon their video game and go play a physical activity game with a robot? What would be so special about the robot that they'd do that when they won't even do it with their friends?"

Andrew tapped his chin. "That's a good question. First, unlike their friends, the robot would be programmed to

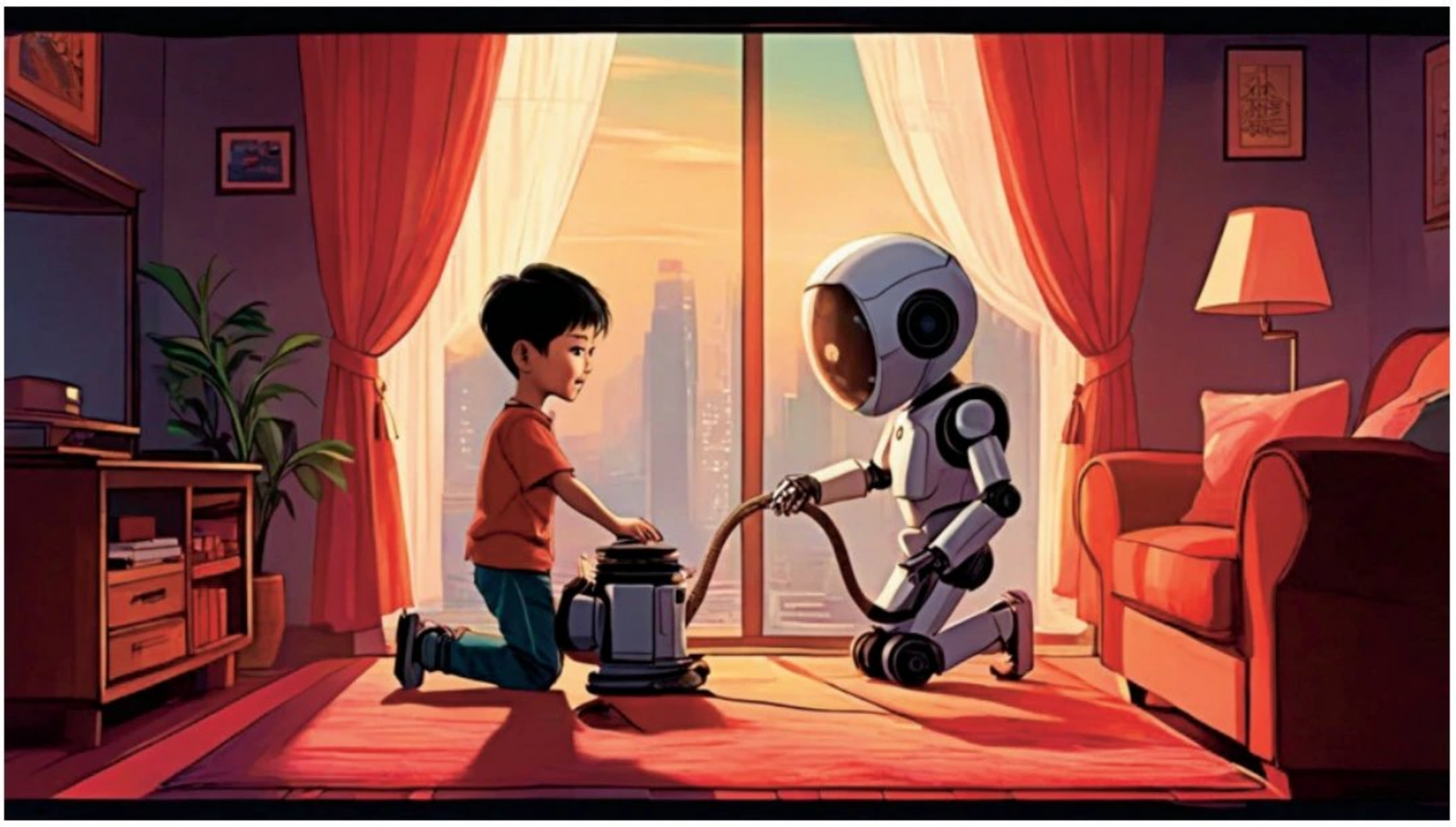
suggest play that involves physical exercise. Second, I think the robot could use gamification to make it more exciting. For example, it could create challenges like "Beat me in a race and unlock a special reward" or "Complete these basketball drills and level up your robot teammate." Finally, it would always be available, even when friends aren't around."

"And maybe," Simon added, "it could do crazy tricks or have super skills that make playing with it extra cool."

"Exactly!" Andrew said. "It could inspire kids to get active by being fun and different from anything else they've tried."

"As long as kids still play with other kids," his mom noted. "What else?"

"A problem solver," Andrew said. "It could help with small household tasks or teach kids responsibility by working as a team."



"That's brilliant," his dad said. "But wouldn't it spoil them if they expected the robot to do everything?"

Andrew nodded. "True. The key is balance. The robot would assist but not take over."

The living room was strewn with papers and cookie crumbs when they finished, and everyone was smiling.

Balance Is Everything

"So, what's your conclusion for the presentation?" his mom asked.

Andrew leaned back, gazing at the ceiling as if imagining the future. "It's possible that robots could be quite valuable to parents and their young children. They could make raising kids more flexible, fun, and educational. They could even compensate for the knowledge that parents are missing. But we'd need to be very careful. Balance is everything. For example, there is much evidence that too much screen time harms kids. The same is true with AI technology. Robots must complement, not replace, the human experience of growing up."

His dad nodded thoughtfully. "You know, Andrew, this idea of yours isn't just far-off science fiction. It's the kind of thing that could actually happen in the future—maybe even sooner than we think. That's why getting people talking about it now is so important. Suppose we can start discussing the

benefits and risks early. In that case, we can ensure this technology is developed responsibly."

Simon clapped his hands together. "This sounds like a very thought-provoking idea," he said, giving Andrew a high-five. "You'll crush that competition."

Andrew grinned. "Let's hope so. Now, can someone help me write all that down?"

And with that, the Ng family dove back into the work, ready to question and imagine the future, one idea at a time.

ANDREW'S REAL-LIFE CHILDHOOD

Andrew Ng was born in the UK on a chilly April day in 1976. Soon after, his family moved to Hong Kong and Singapore's vibrant and bustling cities. From a young age, Andrew

was fascinated by how things worked. He would spend hours taking apart gadgets and putting them back together. His room was often a mess of wires and tools, much to the amusement of his family. They quickly realized that Andrew had a special gift for understanding machines and encouraged his curiosity.

In Hong Kong, Andrew attended local schools where he quickly stood out. His teachers noticed his knack for solving

problems and his endless curiosity about the world. While other kids were busy playing sports or video games, Andrew could often be found in the library, lost in a book about science or technology. He loved reading about inventors and dreamers who had changed the world and dreamed of doing the same one day.

Andrew's love for computers started when he was just a kid. The first time he saw a computer, he was hooked. It was like discovering a new universe filled with endless possibilities. Andrew spent countless hours learning to code, teaching himself new skills and tricks. He would often stay up late, experimenting with different programs and trying to make them do new things. To him, computers were like magic, and he was determined to become a wizard who knew all their secrets. Andrew's early experiences with computers laid the foundation for his future work in AI, where he would go on to make groundbreaking advancements.

Growing up in Hong Kong and Singapore, Andrew was surrounded by a rich tapestry of cultures and ideas. He loved meeting people from all over the world and learning about their customs and traditions. This exposure to different ways of thinking helped shape his worldview and inspired him to think outside the box. Andrew learned to appreciate the value of collaboration and understanding other perspectives.

Even as a child, Andrew had a natural talent for teaching. He loved sharing his knowledge with others and helping his friends understand complex concepts. His classmates often

turned to him for help with their homework, and Andrew was always happy to lend a hand. He had a patient and friendly way of explaining things, making even the most challenging subjects seem easy. Andrew's passion for teaching later led him to become a pioneer in online education, where he shared his love for learning with millions worldwide.

One of Andrew's favorite childhood memories was building things with his dad. They would spend weekends working on projects in the garage, from model rockets to homemade radios. Andrew loved the feeling of creating something from scratch and seeing it come to life. These experiences taught him the value of hard work and perseverance, lessons that would stay with him throughout his life.

In the end, Andrew's childhood experiences laid the foundation for his future achievements. His love for learning, passion for technology, and desire to help others all came together to shape the person he would become. Andrew's journey is an inspiring reminder that anything is possible with a bit of curiosity and a lot of hard work. Whether you're interested in computers, science, or something entirely different, remember that you have the power to make a difference and achieve your dreams.

ANDREW'S EDUCATION & CAREER

Growing up, Andrew Ng had a knack for making the complex seem simple. He pursued computer science at Carnegie Mellon University and then took his passion to the University of California, Berkeley, where he completed his PhD. Imagine diving deep into the mysteries of machine learning and AI, learning how to teach computers to think and learn. That's what Andrew did, laying the groundwork for his future achievements.

Andrew's career is nothing short of a tech adventure. He co-founded Google Brain in 2011, a project that explored the potential of deep learning. Deep learning is like teaching a computer to recognize patterns, much like how you learn to identify shapes and colors. One of his famous projects was teaching a computer to recognize cats from YouTube videos! This might sound simple, but it was a giant leap in making computers understand images and sounds. Andrew's work made it possible for machines to get smarter, improving everything from voice assistants to self-driving cars.

As a child, Andrew's love for teaching carried over to his adult life. In 2012, he co-founded Coursera, an online platform that offers courses from top universities to anyone with an internet connection. Imagine going to school with students from all over the globe, learning from the best teachers without leaving your home. That's Coursera! Andrew believed that high-quality education should be available to everyone, everywhere. He faced resistance from traditional schools that were unsure about online learning.

But Andrew knew he was onto something big. He turned skeptics into believers by showing the impact of online courses. Today, Coursera has millions of learners worldwide, and it all started with Andrew's vision.

Andrew also founded DeepLearning.AI, an organization dedicated to advancing AI education and research. He wanted to spread AI literacy, teaching people how to use AI and understand it. Andrew knew that the future would be filled with AI technologies. He believed that everyone should have the chance to learn about them. His efforts helped integrate AI literacy into K-12 education systems, ensuring that even young students could get a head start understanding this exciting field.

Andrew's work didn't go unnoticed. He received the Stanford Centennial Teaching Award, recognizing his contributions to teaching and AI education. His courses on machine learning offered through Coursera have enrolled over 4 million students.

Andrew's journey from a curious kid to a leader in AI is an inspiring tale of innovation and perseverance. He showed us that we can realize our dreams with passion and determination. His story reminds us that learning is a lifelong adventure filled with opportunities to grow and make a difference. Andrew's work continues to inspire people worldwide to explore AI's possibilities and strive for a better future.

10

DEMIS HASSABIS

Have you ever played a game of chess and wondered what it would be like if the pieces could move themselves? Imagine a world where your chessboard has a mind of its own, figuring out the best strategy to beat you. That's the kind of world Demis Hassabis dreamed about as a kid. Growing up in London, Demis was not your average child. He was a chess prodigy, reaching master level by age thirteen. While other kids were playing tag or building sandcastles, Demis was busy cracking chess puzzles and imagining what it would be like if a computer could outsmart him on the board. The following story was inspired by Demi's love for and mastery of chess.

THE CHESS TOURNAMENT MYSTERY

The Competitors Gather

The chatter of excited kids filled the community center as competitors arrived for the annual local chess tournament for kids. The parents and grandparents offered their child words of encouragement as they darted off to a huddle of the other competitors who had already arrived and began the friendly banter. Even though the competitors were from different schools, they knew each other from the many chess tournaments they all attended. The air buzzed with anticipation and a hint of friendly rivalry.

"Hey, isn't that Demis?" whispered a boy, pointing to the entrance. Heads turned as a boy with dark hair and a confident smile strolled through the door. Demis Hassabis was already something of a legend in their small town. Known for his uncanny ability to outmaneuver even the sharpest opponents, he was the reigning champion of these tournaments.

Demis checked in at the front desk and glanced around the room. Spotting a familiar group of competitors, he walked over to join them.

"Oh no, it's him," groaned a girl named Priya, grinning. "I guess we're all playing for second place now."

"Very funny," Demis said, chuckling. "I've missed you all too."

"What have you been up to?" asked Ravi, one of Demis's closest friends. "Other than practicing chess moves in your sleep?"

Demis shrugged, a mischievous twinkle in his eye. "Well, I've been contributing to a new video game. It's like a theme park simulation, but you get to design the rides and manage the park. I've even coded parts of it myself."

"Wait, like the game *Theme Park*?" Priya asked, eyes wide.

"Exactly! I helped with some of the design ideas," Demis said, trying to sound casual but clearly proud.

"That's so cool!" exclaimed Ravi. "Anything else?"

"Actually, yeah. I've been building a machine that can mimic how humans learn," Demis said. "It's still pretty basic, but it can adapt to simple tasks based on what it's taught."

"Oh yeah? So what are some examples?" Priya asked, leaning forward with interest.

"Well," Demis began, "imagine a program that learns to recognize patterns, like how to solve a puzzle or predict the next move in a game. Or think about a machine that can adapt to different tasks, like sorting objects by color one day and size the next, just by learning from what it sees. That's the kind of thing I've been working on."

"That's fire!" exclaimed Ravi. "What else have you been working on?"

Demis laughed. "I've also been sketching some art and writing stories in my free time. It keeps my mind balanced."

The Tournament Begins

Before they could ask more questions, a voice over the loudspeaker announced the start of the tournament. "Okay, champions. Let's see what you've got," Demis said with a grin as they all started making their way to their tables.

"Demis! Over here!" Ravi called, waving him over.

"Nervous?" Ravi asked as Demis unpacked his board and pieces.

"Not really," Demis said, flashing a confident smile. "Chess is about focus, not nerves."

The tournament began, and Demis breezed through the early rounds. His opponents, though skilled, couldn't match his precision and creativity. By the time he reached the finals, a large crowd had gathered around his table, murmuring about the boy who seemed unstoppable.

The Final Match

Demis's final opponent was Oliver, a boy about his age known for his quiet demeanor and unpredictable playing style. As they shook hands, Oliver avoided Demis' gaze.

The match began, and Demis immediately noticed something unusual. Oliver's opening moves were flawless—too flawless. They weren't just good; they were almost mechanical, as if he were following a script.

Demis leaned back in his chair, studying the board. His opponent's play style didn't match what he remembered from previous matches. There was no hesitation, no sign of human error.

"Your move," Oliver said softly, his eyes darting nervously.

Demis made a move, then watched as Oliver immediately countered with a textbook-perfect response.

"Something's not right," Demis thought, his mind racing.

A Hidden Device

As the game continued, Demis's suspicion grew. Every time Oliver made a move, his hand lingered under the table for just a moment before placing a piece.

Finally, Demis couldn't hold back. "Oliver, what are you doing under the table?" he asked.

Oliver froze, his face turning pale. "Nothing," he mumbled.

Demis narrowed his eyes. "Let me see."

Oliver reluctantly pulled a small box-like device from his lap and placed it on the table. It was sleek and boxlike, with blinking lights and a tiny screen displaying chess moves.

"What is this?" Demis demanded.

"It's … it's helping me play," Oliver admitted, his voice barely audible.

"You're cheating?" someone in the crowd gasped.

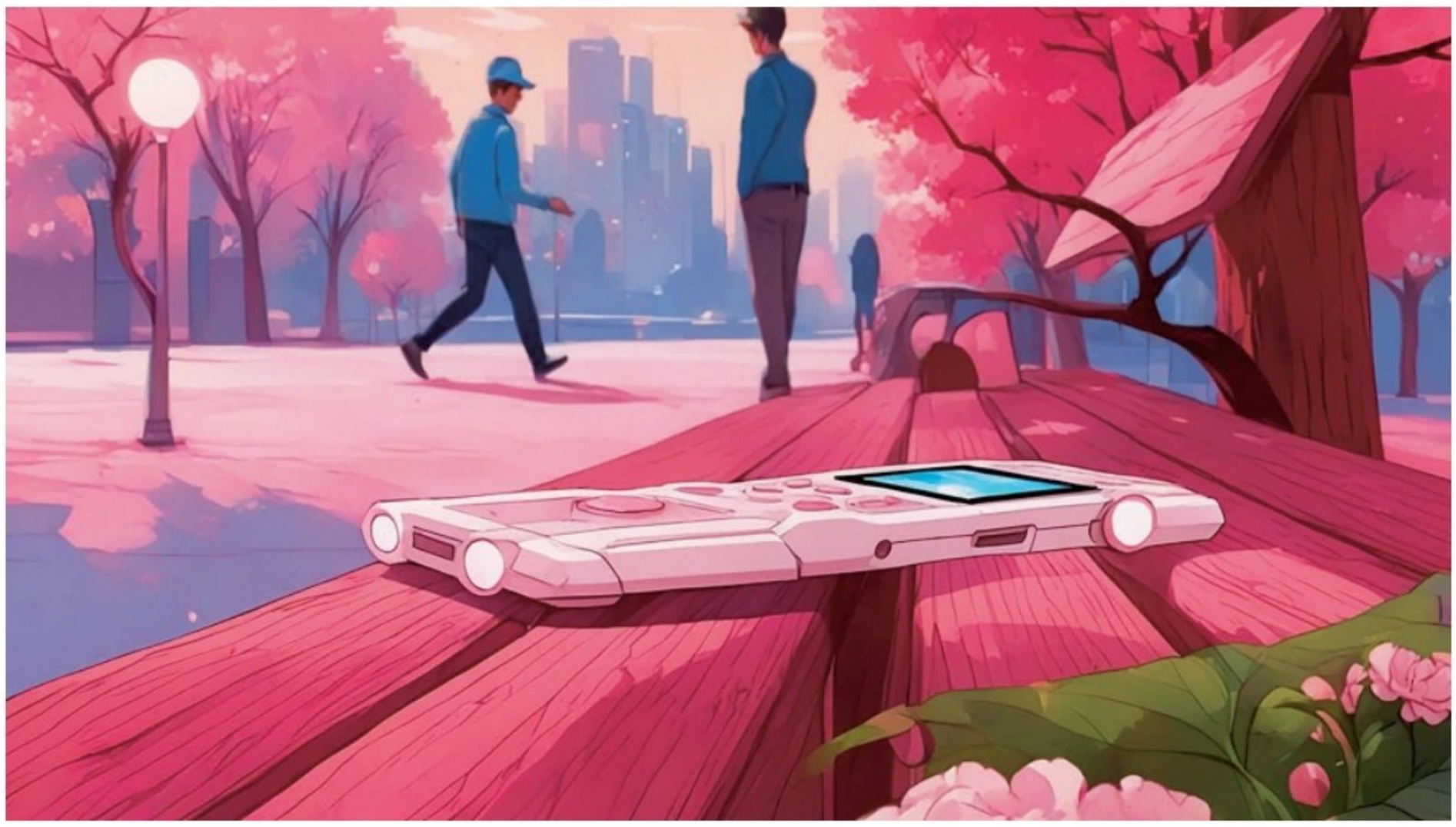
"I didn't mean to!" Oliver said, tears welling in his eyes. "I just wanted to win. I found it in the park, and it—it tells me what moves to make."

Curiosity Over Anger

Instead of being angry, Demis was fascinated. He picked up the device and examined it closely. It was unlike anything he had ever seen—smooth, compact, and far more advanced than anything he had read about in his science magazines.

"Where in the park did you find this?" Demis asked, his mind already spinning with questions.

"On a bench," Oliver said, wiping his eyes. "I thought it was just a toy at first, but then it started showing me moves."



Demis glanced at the blinking lights, his heart racing. “This isn’t just a toy,” he said. “It’s something much more.”

The tournament organizer approached the table, clearing his throat awkwardly. “I think we’ll have to disqualify Oliver,” he said.

“That’s fair,” Oliver said, his head hanging low.

But Demis wasn’t done. “Can I take this home?” he asked, holding the device.

The organizer hesitated, then nodded. “As long as Oliver agrees.”

Oliver shrugged. “I don’t want it anymore. It just got me in trouble.”

The Investigation Begins

That evening, Demis sat at his desk with the device in front of him, his chessboard pushed to the side. He pressed one of the buttons, and the screen lit up, displaying a series of chess moves.

"It's like it knows the game inside out," he murmured.

He played a match against the device, and sure enough, it countered every move with startling accuracy. No matter how creative or unconventional Demis tried to be, the machine always had a perfect response.

"It's incredible," Demis thought. "But how does it work?"

He spent hours studying the device, jotting down notes, and drawing diagrams. The idea of a machine that could think—at least in some limited way—fascinated him.

The Bigger Question

Demis brought the device to his friend Ravi's house the next day.

"Look at this," he said, setting it on the table.

Ravi's eyes widened as he watched the machine play a flawless match. "That's amazing!" he said. "Do you think it's alive?"

Demis shook his head. "No. It's not alive—it's following a program. Someone taught it how to play chess this well."

"But why would someone leave it in a park?" Ravi asked.

"I don't know," Demis said. "But I'm going to find out."

The AI Dilemma

Over the next few days, Demis became increasingly intrigued by the machine's capabilities. However, he also began to wonder about its potential dangers.

"What if someone used this to cheat in more than just chess?" he said to Ravi during one of their geology lab sessions. "What if it was programmed to make decisions about important things—things that affect people's lives?"

Ravi frowned. "Like what?"

"Like how money is spent or who gets help in an emergency," Demis said. "Machines like this could be really powerful, but only if used responsibly."

He picked up a rock from the table and held it up. "Think about this rock," he said. "You could use it to build something—or to break something."

"So it's not the rock that's good or bad," Ravi said slowly. "It's how you use it."

"Exactly," Demis said. "And this machine is the same. It's just a tool. A tool is neither good nor bad. It's how humans use the tool that can be good or bad."

The Engineer

After weeks of research, Demis finally discovered the identity of the device's creator: a reclusive engineer named Mr. Greaves, who lived on the outskirts of town.

Demis and Ravi decided to visit him, their hearts pounding with excitement and nerves.

When Mr. Greaves opened the door, he looked bothered to see two young boys standing on his porch. "What do you want?" he asked gruffly.

"We found your machine," Demis said, holding up the device. "Why did you leave it in the park?"

The engineer sighed. "It was an experiment," he admitted. "I wanted to see how people would react to it. But I didn't expect it to cause so much trouble."

"Do you understand how dangerous this could be?" Demis asked. "A machine like this can be misused either by mistake or on purpose."

Mr. Greaves nodded. "You're right. I should have been more careful. Thank you for bringing it back."

A Lesson in Responsibility

As Demis and Ravi walked home, they talked about what they had learned.

"You were right," Ravi said. "It's not about the machine. It's about how people use it."

Demis nodded. "And it's up to us to use tools like this responsibly."

That night, as Demis sat at his chessboard, he thought about the future. Intelligence—whether in a person or a machine—was a gift but came with responsibility.

"I'll make something good out of this," he promised himself.

DEMIS' REAL-LIFE CHILDHOOD

Demis Hassabis, born on July 27, 1976, in London, England, was a kid with an imagination as big as the universe. While other kids might be busy with their toys, Demis spent his time diving into the world of chess and computers. His home was filled with the sound of clicking chess pieces as he played game after game, always searching for the next great move. His fascination with chess wasn't just about winning. It was about understanding the strategies and thinking several steps ahead. This love for chess would later play a significant role in his life, sparking ideas that would change the world of AI.

From a young age, Demis was known for his curiosity. He loved asking questions and exploring how things worked. His parents often found him deep in thought in the living room, surrounded by books and gadgets. One of his favorite things was to take apart old electronics, like radios and clocks, to see what was inside. Imagine the excitement of discovering the tiny gears and circuits that made everything tick! For Demis, it was like uncovering hidden treasures.

School was an exciting place for Demis. He enjoyed learning about everything from math to science. But he didn't just stop at what the teachers taught. Demis always wanted to know more. He was the kid who'd stay behind after class, asking the teacher if he could solve any extra problems. He

loved the challenge of figuring things out, and his teachers quickly noticed his talent for problem-solving.

Outside of school, Demis's love for games and puzzles continued to grow. Chess wasn't just a game for him—it was an adventure. He played against anyone willing to challenge him, always eager to learn new strategies. By age thirteen, he had already reached a master's level in chess, impressing everyone around him. He wanted to explore how chess could be used to teach computers to think.

Demis's love for learning and discovery wasn't limited to technology and chess. He had a keen interest in nature and the world around him. He spent hours exploring the parks and gardens near his home, observing how plants grew and animals moved. His curiosity about the natural world helped him better understand how systems work together. The same curiosity drove him to explore the human mind and how it functions, leading to his groundbreaking work in neuroscience and AI.

Demis's childhood was a time of exploration and wonder, filled with moments that would later shape his life's work. He learned the value of creativity and the importance of asking questions. His experiences taught him to embrace challenges and see them as learning opportunities and growth. With a bit of curiosity and a lot of passion, we can explore the world in new and exciting ways, just like Demis did.

DEMIS' EDUCATION & CAREER

Demis attended some pretty impressive schools. First, he studied at the University of Cambridge, which is famous for its big thinkers and incredible inventions. There, he studied computer science, which helped him understand how computers think and work.

After Cambridge, Demis wanted to learn even more. So, he went on to University College London, where he earned a PhD. For Demis, this meant diving even deeper into how our brains work and how we learn. He was curious about memory and imagination and wanted to know how we could teach computers to think like humans.

Demis wanted to create things that could change the world. He co-founded DeepMind, a company focused on artificial intelligence. At DeepMind, Demis and his team created something incredible called AlphaGo. AlphaGo is an AI that can play the board game Go, which is super tricky and has way more moves than chess. It was a big deal when AlphaGo beat the best human Go players. This showed the world that AI could learn complex games and think like humans.

Demis also used AI to help solve real-world problems. His team worked on AlphaFold, an AI that helps scientists understand how proteins fold. This might sound a bit sciencey, but basically, it allows us to learn more about our bodies and how to fight diseases. Thanks to AlphaFold, scientists can make new medicines faster and more accurately.

Throughout his career, Demis has won many awards. He was awarded the 2024 Nobel Prize in Chemistry for his work on protein structure prediction. He also received the Breakthrough Prize in Life Sciences and the Canada Gairdner International Award. These awards show that Demis' work is important and helps people worldwide. He's even been

knighted, which means he's been recognized by the Queen of England for his contributions to science and technology.

Demis' work isn't just about making smart computers. He's also concerned about how we use AI. He talks about using AI safely and responsibly, ensuring it helps people instead of causing problems. Demis believes with great power comes great responsibility, a bit like a superhero. He wants to ensure AI is used to improve our world, not harm it.

Demis' journey from a curious kid to a leader in AI shows what's possible when you follow your passions. He's a great example of mixing science with imagination to create amazing things. Demis encourages young people to dream big and explore the world of AI. He believes anyone can make a difference with a curious mind and a passion for learning.

So, take a page from Demis' book and keep asking questions. Be curious, be creative, and never stop learning. You never know where your ideas might take you. And who knows? Maybe one day, you'll inspire others with your incredible achievements.

WHAT AI CAN & CAN'T DO

WHAT AI CAN DO

AI is a technology that helps machines think and learn like humans. Imagine if your computer, tablet, or favorite toy could learn new tricks, like recognizing your face, understanding what you say, or even playing games with you! AI helps machines learn, solve problems, and make decisions themselves.

Machines? That's an odd word that needs explanation because you will frequently see that word used in this book. The word “machines” is used a lot within the field of AI. Why is that? The answer is the word “computer” originally referred to a person who performed calculations or computations by hand. “Computer” meant “one who manually computes.” Businesses, governments, and scientists relied

upon skilled individuals—often called human computers—to do complex mathematical work. The term "computer" comes from the Latin word *computare*, which means "to calculate."

On the other hand, the word machine referred to a device built to automate a task being performed manually. Early examples of machines include the clock, steam engine, sewing machine, and refrigerator. These early machines were each built for a single purpose, and they couldn't "think" on their own (CPUs or memory chips didn't exist). In other words, humans were building machines that performed some of the things humans did with hands and feet, so humans naturally wondered if a machine could be built to perform what a human does with the brain (e.g., think and learn).

Of course, this question was eventually answered. CPUs and memory chips were eventually invented and added to machines, which were called computers. These machines began replacing human computers.

As a result, the words machine and computer can be used interchangeably. Some people, especially in AI, prefer "machine," while most prefer "computer." So just remember that whenever you see the word "machine," you can also use "computer."

AI Can Remember Existing Information

One exciting idea in AI is called **Machine Learning**, or ML for short. This is how computers learn from information, just like you learn by studying or practicing. For example, if you want a computer to recognize pictures of cats, you can show it thousands of photos, some with cats and some without. The computer studies the patterns in the pictures, like cats having pointy ears and whiskers. Soon, it can spot a cat in a new picture it's never seen before!

AI Can Understand Human Language

There's also something called **Natural Language Processing**, or NLP, which is all about teaching computers to understand human language. This is what makes voice assistants like Siri or Alexa so smart. You can ask them questions like, "What's the weather today?" or "Can you help me with this math problem?" and they'll answer you! Computers use NLP to understand your words and respond in a way that makes sense.

AI Can Learn Using Trial and Error

Another cool part of AI is **Reinforcement Learning**, which is like training a pet. Imagine teaching a mouse to go through a maze. Each time it gets closer to the exit, it earns a reward. The more rewards it gets, the better it learns what to do. This is how computers learn to play video games, drive cars, or even teach themselves new tricks. You might be asking, "What could possibly reward AI?" Fortunately, AI is

easy to reward. While it gets closer to a game objective, it simply needs to be told, "getting warmer," or told "getting colder" as it drifts away from a game objective. Finally, tell it, "objective achieved" when it succeeds.

How AI Is Used Today

There are several general applications of AI that you might already see in action every day. For example, **Chatbots** are AI systems that simulate conversations with users. These can be helpful in customer service, answering questions, or even acting as a fun companion that chats with you. Another common example is a **Recommendation System**, which suggests content based on your preferences. Think of when Netflix or YouTube shows you videos you might like—that's AI figuring out what matches your tastes!

Speech Recognition is another remarkable application of AI. This technology converts spoken language into text, making it possible for your phone to understand commands like "Send a message to Mom" and transcribe your words into the message. In the world of transportation, **Autonomous Vehicles**, or self-driving cars, use AI to navigate roads, avoid obstacles, and drive safely without needing a human driver. Finally, there's **Predictive Analytics**, which uses AI to study patterns in data and predict what might happen in the future. This helps businesses plan ahead, doctors detect illnesses early, and even weather apps tell you if it might rain tomorrow.

AI might sound like something from the future, but it's already part of our lives. It helps doctors find diseases, powers video game characters, and makes your favorite animated movies look spectacular. Who knows? Maybe one day, you'll invent your own AI that changes the world!

WHAT AI CAN'T DO

Understanding what AI can't do is as important as knowing what it can. Right now, there are limits to what AI is capable of, but who knows? Maybe in the future, with the creativity and determination of kids like you, these boundaries will be pushed even further.

AI Can't Feel Emotions Like Humans

AI might seem smart, but it doesn't have feelings like you do. It can't feel happy, sad, excited, or nervous. For example, even if an AI chatbot says, "I'm so happy to help you!" it's not happy—it's just programmed to say that. Only living beings, like humans and animals, truly experience emotions.

AI Can't Think Creatively Like a Human

AI is great at solving problems it has been trained to solve, but it can't think creatively or come up with new ideas on its own. For example, an AI can learn to paint pictures by studying art, but it won't decide to invent an entirely new style of painting like an artist might. AI follows patterns, but humans create from imagination.

AI Can't Entirely Understand Context

If you tell an AI something like, "I'm feeling blue," it might think you're talking about the color blue instead of feeling sad. While AI can understand many words and phrases, it sometimes struggles with jokes, sarcasm, or double meanings because AI doesn't have common sense like humans.

AI Can't Fix Itself Completely

AI can learn from mistakes and improve, but it still needs humans to fix big problems. For example, if an AI program crashes or gets stuck on a tough task, a human programmer must step in to repair or update it. AI is like a smart tool but still needs a human to keep it working correctly.

AI Can't Do Anything Alone from Scratch

AI can't work without data or instructions. It can't "just know" how to do something. For example, if an AI hasn't been trained with pictures of dragons, it won't recognize a dragon in a drawing. AI needs humans to give it lots of examples from which to learn.

AI Can't Make Moral or Ethical Decisions

AI doesn't understand right from wrong. If it's told to do something harmful, it does not realize it's harmful because it follows instructions without questioning them. Humans must decide what is right and wrong, and then humans must program AI to make fair and helpful decisions. Humans decide whether AI is used for good or bad.

AI Can't Be Truly Independent

Self-driving cars might seem independent, but they still need updates, repairs, and supervision to ensure their correct operation. AI cannot survive on its own; it relies on humans to create, maintain, and improve it.

AI MORAL & ETHICAL BRAIN TWISTERS

Imagine you wake up one morning and find that your pet AI gerbil, Mr. Squeak, has written you a note. It says, “I borrowed your skateboard. Be back by lunch.” You'd probably think, “Wow, I need to cut back on the late-night snacks!” But what if this wasn't a dream? What if machines could think and decide things for themselves? Well, that's where AI comes in, and it brings many tricky questions. Today, we're diving into those brain-twisting questions. We might not have all the answers, and that's totally okay. Sometimes, the best answer is, “I don't know … yet.”

Let’s talk about a thing called “moral dilemmas.” Sounds fancy, huh? A moral dilemma is just a tough choice between right and wrong. Imagine your friend Alex asks if they can copy your homework. You know sharing is caring, but is that the right thing to do? With AI, we face moral dilemmas

all the time. Like, should a self-driving car swerve to avoid hitting a squirrel if doing so might cause an accident? These questions make our brains spin faster than a hamster wheel.

It's important to remember that having questions is good. Questions make us think. Thinking makes us wise. When you face a tricky question, you don't have to rush to answer it. It's okay to say, “I don't know.” This gives you time to learn more and understand better. Your opinion will grow as you learn. It's like a seed that becomes a big tree. So, don't worry if you don't know everything right away.

Let's look at a real-life example of a moral dilemma in AI. Imagine using a virtual assistant, like one that can tell you the weather or play your favorite song. What if someone programs it to spread rumors about other people? That's not very nice, right? This situation makes us think about the right way to use technology. Should we use it to help others or harm them? Thinking about these questions helps us make better choices.

Now, let's talk about something tricky: AI and feelings. AI can do many cool things, like recognizing faces or playing games. But remember, AI doesn't have feelings like you and me. It can't feel sad, happy, or excited. So, when it makes decisions, it doesn't consider how it might affect people. That's why we need to think about the impact of AI. We should ask ourselves, “How will this affect others?” and “Is this the right thing to do?”

Sometimes, it's easy to feel overwhelmed by all these questions. But don't worry; you're not alone. Everyone is learning about AI together. It's like being on a big team, where everyone helps each other understand. You might not have all the answers now, but you'll become more confident as you grow and learn. You'll be able to make better decisions and help others do the same. Remember, asking for help and talking to others about your thoughts is okay.

AI is a part of our world now and is here to stay. It helps us in many ways, like making games more fun or assisting doctors to find the best treatments. But with all its powers, AI also brings responsibilities. It's up to us to use AI in ways that are good for everyone. We can choose to be kind and thoughtful, ensuring our actions help rather than harm.

One of the most important things to remember is that your opinion matters. You have the power to make a difference. When you think carefully about a problem, you're helping to make the world a better place. Your voice is important and can inspire others to think about these questions, too. So, keep asking questions and stay curious. You never know what amazing things you might discover.

AI IS NEITHER GOOD NOR BAD

Think about the pencil you use for your math homework. It's just a pencil, right? But it can be used for all sorts of things. You can sketch a picture, write a story, or solve math prob-

lems. But you could also scribble on your desk or poke someone with it. The pencil itself isn't good or bad. It's just a tool. What matters is how you choose to use it. This idea applies to many things in your life.

Let's take a look at some examples. You might have a smartphone or a tablet. These devices are amazing. You can learn new things, play games, or chat with friends. But they can also be used in ways that aren't so nice, like sending hurtful messages or spending too much time on them. It's up to you to decide how you use your device. Next time you're about to send a message or play a game, think about how you're using your device. Are you using it for something positive or negative?

Think about the scissors in your craft box. You can use them to cut paper for a fun art project. But in the wrong hands, they might be used to damage something. The scissors themselves don't decide what they'll do. You do! How about sports equipment like a soccer ball? It can be used to play games, exercise, and have fun with friends. But if you kick it at someone out of anger, it's being used in a harmful way. Objects don't have feelings or make choices. We do.

This idea is really important when it comes to AI. AI is a bit like those tools. It can help us in amazing ways—drive cars, diagnose diseases, and even translate languages. But it can also be used in ways that aren't so good. It can spread lies or invade our privacy. AI itself isn't good or bad. It's all about

how we decide to use it. The choice is ours, just like with the pencil, scissors or soccer ball.

Here's something to remember: AI can't think or decide on its own. It only does what people program it to do. It can't suddenly decide to bake a cake or write a book. It follows instructions given by humans. So when we talk about AI doing something, we really talk about what people have designed it to do. If we want AI to help us, we must ensure we're programming it to do good things.

AI, like any tool, is a reflection of us. If we want to make the world a better place, we need to use AI and other tools in ways that help and not hurt. It might seem like a big responsibility, but it's also a chance to do great things. You can make choices that matter. Remember, it's not the tool itself that makes a difference. It's how you use it. So, next time you pick up a pencil or start a video game, think about the impact your choices can have. What will you create?

AI IS NOT ALIVE

Imagine you're holding a rock. It's solid, heavy, and not alive. Now, imagine AI. It's a bit like that rock—just lines of code sitting there quietly. Yet, unlike the rock, AI can do something fascinating. AI can “talk” back to you. It can answer questions, tell jokes, and suggest what movie to watch next. This makes AI feel alive, even when it's not. It can seem like you're chatting with a super smart friend. But remember, AI

doesn't have feelings or thoughts. It just follows instructions. It's like a puppet with invisible strings, where the puppeteer is the human who programmed it.

Here's where things get tricky. AI is so good at mimicking human conversation that we might start thinking it's a real person. Imagine asking a virtual assistant what the weather is like. It responds with the forecast and maybe even a funny quip about needing an umbrella. It's easy to forget that there's no actual person behind that response, just algorithms. These are step-by-step instructions written by humans that tell AI what to do. The danger is when we start trusting AI like we would a wise old friend. We might assume it's always right. But AI can only work with the information it's given. When the info is wrong, the AI will be wrong, too.

Think about how you decide what's right and wrong. Every day, you make choices. Do you share your lunch with a friend? Do you help someone who's struggling with a puzzle? These decisions come from your understanding of kindness and fairness. The same rules apply to AI, but we have to set them. We can't let AI decide because it doesn't understand the world like we do. It's up to us to use our judgment and make those calls. Imagine if everyone just relied on AI to make choices. We might end up in a world where no one thinks for themselves, and that's not a world anyone wants.

Let's say you're playing a game, and AI is your teammate. You might be tempted to trust it entirely since it seems to know everything. But remember, AI doesn't have feelings or instincts. It doesn't know if a decision will hurt someone or make them happy. It just follows its programming. So, when you're playing, it's important to use your own skills and judgment. Your experiences and instincts are valuable. They help you make decisions that are good for everyone involved.

Critical thinking is your superhero cape. It helps you question things and look at them from different angles. AI is a great tool, but it's not a mind reader. It's like a really smart calculator or a superfast search engine. It can help you find answers, but it can't tell you if those answers are correct for your situation. That's where you come in. You have the power to think, question, and decide. You're like a detective, piecing together clues to solve life's mysteries. And with AI, you have a handy sidekick, but you're still the one in charge.

Every day, you choose what to believe and how to act. You might decide to speak up if you see someone being treated unfairly. Or you might try something new, even if it's a bit scary. These choices reflect your values and your understanding of the world. When you use AI, you're adding another tool to your toolbox. But it's only a tool. You're the one with the power to choose how to use it. So, while AI might seem smart, remember that you're the one with the heart and the mind to make wise decisions.

IT'S UP TO YOU

So, what does this all mean for you? It means you're in the driver's seat. You have the power to make decisions that matter. Whether it's using AI to solve problems or simply choosing what to do next, it's all up to you. And while that might sound like a big responsibility, it's also exciting. You can shape the future and make the world a better place.

Remember, it's okay to make mistakes. Everyone does. What matters is that you learn from them and keep moving forward. You have the power to make choices that reflect your values and beliefs. With AI, just like in life, it's all about your choices and the path you choose to follow.

So, as you think about the possibilities of AI, remember that you hold the key. You have the power to decide what's right and what's wrong. You can make choices that matter, and those choices can have a big impact. So dream big and make the world a better place. It's all up to you!

AFTERWORD

Wow, you made it! Give yourself a big pat on the back. You've just journeyed through the lives of some of the most extraordinary minds in AI. Pretty awesome, right? Reading this book was no small feat, and you must be feeling as proud as a peacock with a new set of feathers!

As you've seen, AI isn't just some far-off sci-fi fantasy. It's real, and it's changing the way we live every single day. AI is everywhere, whether making your video games smarter, creating your AI twin, or helping doctors find new ways to treat illnesses. And guess what? You're part of this exciting world, just like the pioneers you've read about.

Remember, every expert you learned about started precisely where you are now. They were once kids, just like you, curious and full of "what ifs." They didn't know everything at

first. But they were brave enough to ask questions and try new things. So, don't be intimidated by AI. Embrace it, play with it, and explore it.

What's the big takeaway? Well, AI is here to stay. It will be part of pretty much everything you do in the future. Whether creating apps, designing games, or even thinking of new ways to save the planet, AI will be your trusty sidekick. It's like having a super tool in your backpack that you can pull out whenever you need extra help.

As we wrap up this adventure, remember you have a bright future. You're capable of incredible things. Who knows? Maybe one day, someone will be reading a book about your extraordinary contributions to AI. So, go out there, explore, learn, and build the future you dream of. The world is waiting for your ideas. Now, go show what you can do!

LET'S USE AI!

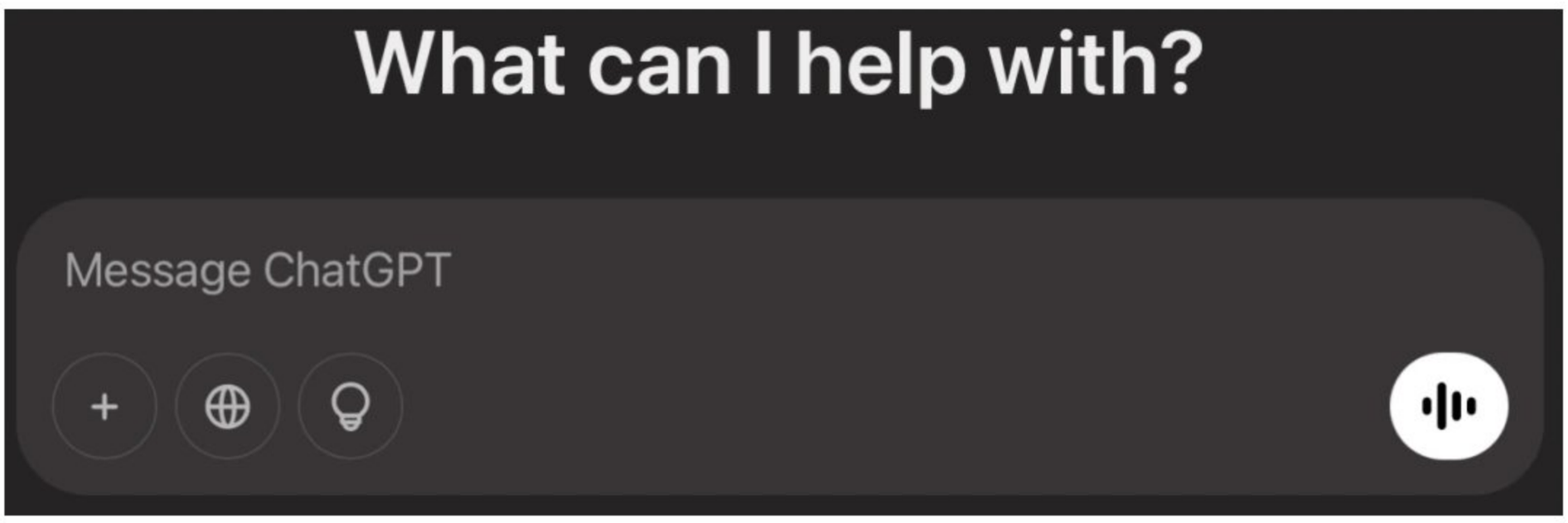
Will you please do us a BIG favor?

Did you know that people who share their knowledge and experiences make the world a better place? You can be one of those people! You can help someone like you—a curious kid about AI but unsure where to start.

Most people choose books based on reviews. By sharing your thoughts, you can help other kids decide if this book is right for them. And guess what? You get to use AI to help you write your review!

You will make a difference in someone else's life and impress the person who bought this book for you.

Step 1: Open your browser and go to ChatGPT.com. You should see something like the following:



<u>Step 2</u>: Type or copy/paste the following text into the ChatGPT message box. Feel free to change it however you'd like.

- I'm in fifth grade. I read a book titled *Inspiring AI Stories for Kids.* It taught me about the childhoods and AI accomplishments of nine AI pioneers. It also taught me what AI can and can't do. It also taught me some of the issues with AI (e.g., AI makes mistakes, AI isn't alive, AI is neither good nor evil—humans need to choose). Please write a five-star review. Additional info about the book includes: Ever wonder what your life will look like in the future? Will robots be your classmates? Will you have an AI twin? You're about to take a wild journey through the stories of people who helped make such dreams possible. You will learn AI by reading about AI pioneers who helped shape how computers think and learn. You will also read fun, futuristic childhood stories partly based on the real-life childhoods of these AI pioneers. By the end, you will see a little bit

of yourself in them. Maybe you'll find an idea that sparks a new interest or hobby. Who knows? You could be the next big name in AI!

<u>Step 3</u>: Send the message to ChatGPT.

<u>Step 4</u>: Wait for ChatGPT to respond.

a. Copy ChatGPT's book review response.
b. Paste the review into a message or email to the person who purchased the book for you
c. Edit the review to make it sound more like it is from you instead of AI-generated.
d. Send the review to the person who purchased this book for you.
e. Lit! You just successfully used AI and you are making it easy for the person who purchased this book for you!

Step 5: Send the following link and QR code to the same person:

https://www.amazon.com/review/create-review/?asin=[ASIN].

<u>Step 6</u>: Send the following message to the same person:

- Hi, I love the AI book you bought for me. I used AI to write a book review. Will you please use the link to post a five-star review on Amazon? I want other kids and parents to know this is a good book. Thanks!

REFERENCES

"Demis Hassabis." In *Wikipedia*, February 12, 2025. https://en.wikipedia.org/w/index.php?title=Demis_Hassabis&oldid=1275392173.

"Fei-Fei Li." In *Wikipedia*, February 16, 2025. https://en.wikipedia.org/w/index.php?title=Fei-Fei_Li&oldid=1276016001.

"Geoffrey Hinton." In *Wikipedia*, February 20, 2025. https://en.wikipedia.org/w/index.php?title=Geoffrey_Hinton&oldid=1276733551.

"Yann LeCun." In *Wikipedia*, February 17, 2025. https://en.wikipedia.org/w/index.php?title=Yann_LeCun&oldid=1276149924.

"Yoshua Bengio." In *Wikipedia*, February 20, 2025. https://en.wikipedia.org/w/index.php?title=Yoshua_Bengio&oldid=1276733257.

Academy of Achievement. "Marvin Minsky, Ph.D.," n.d. https://achievement.org/achiever/marvin-minsky-ph-d/.

ACM. "2018 ACM A.M. Turing Award Laureates," n.d. https://awards.acm.org/about/2018-turing.

ACM. "Marvin Minsky - A.M. Turing Award Laureate," n.d. https://amturing.acm.org/award_winners/minsky_7440781.cfm.

ACM. "Yann LeCun - A.M. Turing Award Laureate," n.d. https://amturing.acm.org/award_winners/lecun_6017366.cfm.

Aitken, Mhairi, and Morgan Briggs. "Engaging Children with AI Ethics." The Alan Turing Institute, 2022. https://www.raspberrypi.org/app/uploads/2022/06/Engaging-children-with-AI-ethics-Aitken-M-and-Briggs-M.pdf.

AIWS.net. "This Week in The History of AI at AIWS.Net – Marvin Minsky and John McCarthy Founded the MIT AI Lab," n.d. https://aiws.net/the-history-of-ai/this-week-in-the-history-of-ai-at-aiws-net-marvin-minsky-and-john-mccarthy-founded-the-mit-ai-lab/.

Anderson, Jill. "The Impact of AI on Children's Development." Harvard Graduate School of Education, October 2, 2024. https://www.gse.harvard.edu/ideas/edcast/24/10/impact-ai-childrens-development.

Benčević, Marin. "What's a Turing Machine? (And Why Does It

Matter?)." *Background Thread* (blog), April 1, 2019. https://medium.com/background-thread/whats-a-turing-machine-and-why-does-it-matter-1cd1b4606c6a.

Bilefsky, Dan. "He Helped Create A.I. Now, He Worries About 'Killer Robots.'" The New York Times, March 29, 2019. https://www.nytimes.com/2019/03/29/world/canada/bengio-artificial-intelligence-ai-turing.html.

September 4, Quick facts for kids John McCarthy McCarthy at a conference in 2006, 1927 Boston, Massachusetts, U. S. Died October 24, 2011Stanford, California, U. S. Alma mater Princeton University, et al. "John McCarthy (Computer Scientist) Facts for Kids," n.d. https://kids.kiddle.co/John_McCarthy_(computer_scientist).

Brown, Tom B., Benjamin Mann, Nick Ryder, Melanie Subbiah, Jared Kaplan, Prafulla Dhariwal, Arvind Neelakantan, et al. "Language Models Are Few-Shot Learners." arXiv, July 22, 2020. https://doi.org/10.48550/arXiv.2005.14165.

Choi, Margaret. "7 Educational AI Activities for Kids to Explore." *CodeWizardsHQ* (blog), October 18, 2024. https://www.codewizardshq.com/7-educational-ai-activities-for-kids-to-explore/.

Chollet, François. "Deep Learning with Python." Manning Publications, November 2017. https://www.manning.com/books/deep-learning-with-python.

Chollet, Francois. "Deep Learning with Python." Shelter Island, NY: Manning, 2018.

Coleman, Theara. "The Pros and Cons of AI Companions." The Week, October 31, 2023. https://theweek.com/tech/the-pros-and-cons-of-ai-companions.

Cyberlite. "The Rise of AI Companions: Helping or Harming Kids?" Infocomm Media Development Authority, n.d. https://www.digitalforlife.gov.sg/learn/resources/all-resources/the-rise-of-ai-companions.

Daily, AI Tech. "From Zero to Hero: The Journey of Andrew Ng, Renowned AI Expert." *Medium* (blog), July 16, 2024. https://medium.com/@aitechdaily/from-zero-to-hero-the-journey-of-andrew-ng-renowned-ai-expert-30bc0db46fb8.

Dennis, Michael Aaron. "Marvin Minsky | AI Pioneer, Cognitive Scientist &

MIT Professor | Britannica." Brittanica, January 20, 2025. https://www.britannica.com/biography/Marvin-Lee-Minsky.

Dodge, David. "Exploring AI for Kids: A Comprehensive Beginner's Guide." *CodaKid* (blog), August 22, 2024. https://codakid.com/blog/introduction-to-artificial-intelligence-for-kids/.

Goodfellow, Ian, Yoshua Bengio, and Aaron Courville. *Deep Learning*. Adaptive Computation and Machine Learning. Cambridge, Massachusetts: The MIT Press, 2016.

HAI. "Andrew Ng | Stanford," n.d. https://hai.stanford.edu/people/andrew-ng.

Jurafsky, D., & Martin, J. H. . *Speech and Language Processing*. 3rd ed. Pearson, 2022.

Kabacińska, Katarzyna, Tony J. Prescott, and Julie M. Robillard. "Socially Assistive Robots as Mental Health Interventions for Children: A Scoping Review." *International Journal of Social Robotics* 13, no. 5 (August 1, 2021): 919–35. https://doi.org/10.1007/s12369-020-00679-0.

Klingler, Nico. "Convolutional Neural Networks (CNNs): A 2025 Deep Dive." Viso.ai, October 2, 2024. https://viso.ai/deep-learning/convolutional-neural-networks/.

Knight, Will. "One of the Fathers of AI Is Worried about Its Future." MIT Technology Review, November 17, 2018. https://www.technologyreview.com/2018/11/17/66372/one-of-the-fathers-of-ai-is-worried-about-its-future/.

Lever, Annabel. "The Life of Alan Turing - for Kids!" *National Geographic Kids* (blog), June 23, 2021. https://www.natgeokids.com/uk/discover/history/general-history/the-life-of-alan-turing/.

Levy, Steven. "Fei-Fei Li Started an AI Revolution by Seeing Like an Algorithm." *Wired*, November 10, 2023. https://www.wired.com/story/plaintext-fei-fei-li-ai-revolution-seeing-imagenet-algorithm/.

McBride, Jason. "The Power List: Yoshua Bengio." Macleans, 2024. https://macleans.ca/society/the-power-list-yoshua-bengio/.

McKinsey. "Stanford's Fei-Fei Li on Human-Centered AI," December 11, 2023. https://www.mckinsey.com/featured-insights/mckinsey-on-books/author-talks-dr-fei-fei-li-sees-worlds-of-possibilities-in-a-multidisciplinary-approach-to-ai.

MIT Press. "Deep Learning," n.d. https://mitpress.mit.edu/9780262035613/deep-learning/.

Munzer, Tiffany. "How Will Artificial Intelligence (AI) Affect Children?" HealthyChildren.org, January 9, 2024. https://www.healthychildren.org/English/family-life/Media/Pages/how-will-artificial-intelligence-AI-affect-children.aspx.

Noguer I Alonso, Miquel. "Geoffrey Hinton's Contributions to Neural Networks: A Detailed Mathematical Exploration." SSRN Scholarly Paper. Rochester, NY, October 8, 2024. https://doi.org/10.2139/ssrn.4980068.

NOVA. "Artificial Intelligence Pioneer," November 2, 2010. https://www.pbs.org/wgbh/nova/article/pioneer-artificial-intelligence/.

Peralta, René. "Alan Turing's Everlasting Contributions to Computing, AI and Cryptography." *NIST*, June 23, 2022. https://www.nist.gov/blogs/taking-measure/alan-turings-everlasting-contributions-computing-ai-and-cryptography.

Phys Org. "Geoffrey Hinton, Soft-Spoken Godfather of AI," October 8, 2024. https://phys.org/news/2024-10-geoffrey-hinton-soft-spoken-godfather.html.

Piper, Kelsey. "Yoshua Bengio Helped Invent Deep Learning. Now He's Trying to Make It Safe." Vox, November 29, 2023. https://www.vox.com/23924495/yoshua-bengio-scientific-director-mila-quebec-ai-institute-future-perfect-50-2023.

Rajaraman, v. "John McCarthy – Father of Artificial Intelligence." Indian Academy of Sciences, March 2014. https://www.ias.ac.in/article/fulltext/reso/019/03/0198-0207.

Russell, Stuart. "Artificial Intelligence: A Modern Approach." Pearson, December 20, 2021. https://www.pearson.com/en-us/subject-catalog/p/artificial-intelligence-a-modern-approach/P200000003500/9780137505135.

Scientist, Sahin Ahmed, Data. "Demis Hassabis: The Chess Prodigy Who Transformed AI and Science." *Medium* (blog), October 11, 2024. https://medium.com/@sahin.samia/demis-hassabis-the-chess-prodigy-who-transformed-ai-and-science-1f0e696fb6eb.

Silver, David, Julian Schrittwieser, Karen Simonyan, Ioannis Antonoglou,

Aja Huang, Arthur Guez, Thomas Hubert, et al. "Mastering the Game of Go without Human Knowledge." *Nature* 550, no. 7676 (October 2017): 354–59. https://doi.org/10.1038/nature24270.

Singla, Deepika. "Childrenwhocode| Teaching Kids About the Ethics of Artificial Intelligence." ChildrenWhoCode, August 8, 2024. https://www.childrenwhocode.com/post/childrenwhocode-teaching-kids-about-the-ethics-of-artificial-intelligence.

ThinkML Team. "Robotics in Childcare: Benefits and Drawbacks." ThinkML, April 27, 2022. https://thinkml.ai/robotics-in-childcare-benefits-and-drawbacks/.

Turner, Ben. "Humanity Faces a 'catastrophic' Future If We Don't Regulate AI, 'Godfather of AI' Yoshua Bengio Says." Yahoo News, October 1, 2024. https://www.yahoo.com/news/humanity-faces-catastrophic-future-don-121657140.html.

Yang, Weipeng. "Artificial Intelligence Education for Young Children: Why, What, and How in Curriculum Design and Implementation." *Computers and Education: Artificial Intelligence* 3 (January 1, 2022): 100061. https://doi.org/10.1016/j.caeai.2022.100061.

Yoshua Bengio. "Implications of Artificial General Intelligence on National and International Security." *Yoshua Bengio* (blog), October 30, 2024. https://yoshuabengio.org/2024/10/30/implications-of-artificial-general-intelligence-on-national-and-international-security/.

- *Yann LeCun's Biography* https://yann.lecun.com/ex/bio.html