

## Chapter 6 Reveal

The day of Robbie's birthday had come. Chelsea had not told Frank any details about the robot and only told Robbie that he was getting something awesome. Robbie wondered if was going to be a new drone, since he broke his last one when he ran it into that brick wall over at the old industrial complex. He also needed a new bike as he was too big for the one he had right now. He was somewhat hoping for the drone. "They are so fun and older kids in the neighborhood started having races," he thought to himself. "If I could train on a better drone I could enter their races and maybe win." There was a drone club now, sponsored by the park district, when one of the old manufacturing buildings was donated to the city. Regardless, Robbie's Mom had said his present would be awesome, so he believed he was going to get something very cool.

Uncle Charlie arrived about 3pm, about a 1/2hr before the party was supposed to start. He arrived with a huge box that was wrapped in robot birthday paper. "Where did he find that?" Chelsea thought when she saw it. Robbie was turning 8 years old, and he had asked for a small party with his favorite pepperoni pizza as the meal. Robbie invited two friends to come who were boys and no girls were invited. His Mom had encouraged him to invite the new girl down the block who had just moved in, but although Robbie seemed to like her, he thought it was strange to invite someone he really didn't hang with to his party. To Mom's disappointment, Robbie rejected her request and only his two best friends that he skated and flew drones with were coming. They were going to watch the first Terminator movie. It was R rated and technically too violent for his age, but he'd already seen some of it at a friend's house and didn't have nightmares. Chelsea had cleared it with his friends parents, committing to fast forward through any sex or violent scenes. So, it was all set to watch one of the best robot movies ever at the end of the party.

3:30 rolled around and everyone had arrived. There were balloons hung from the ceiling in the dining room and the cake was staged in the middle of the table with 8 robot shaped candles sticking out of it. Each robot had a different arm or leg position, and it looked like they were doing the Macarena dance positions. They all had different colors as well and body shapes. Robbie really liked the candles and was a little sad that their heads were going to melt because that's where the candle wicks were sticking out. The cake had also been frosted with a picture of a robot. Chelsea had found a picture of the WhyRobot Companion robot on the internet and printed it out. She took it to the bakery and asked the baker to make the frosting look like the picture. They had done a really good job, including copying the fluorescent rainbow LED colors of the robot picture. Neither Chelsea nor the baker knew that this would represent the robot laughing, but just from a visual standpoint, it looked amazing. The whole perimeter of the dining room had a thin banner containing tens of robots hung near the ceiling. Chelsea had found these online and thought they would be perfect to finish off the decorations. Looking at everything reminded him of his love for robots and he thought about his collection in his room. "This looks really cool, Mom", Robbie said as he and his buddies waited at the table for the pizza to be served.

Eating of the pizza did not take very long. The adults had hoped for some down time to have a drink and visit while the kids ate the pizza, but it was not very long until they were restless to open presents and have some of the cake. One of Robbie's buddies asked if he could have the robot's head to eat. Robbie

responded with a “ew, I’m not letting you cut a hole in the middle of the cake so you can just eat the robot’s head. You can have his hand if you want.” And with that they all laughed.

The other friend responded, “I want his foot!” and they all laughed again.

Robbie leaned over the cake and then looked to see if the adults were looking. They were in the kitchen and not paying attention. Robbie pointed to the crotch area and motioned like he was going to scoop up the frosting and eat it. All three of the boys fell back in their chairs laughing very hard. This caught the attention of Chelsea who came into the room.

“What are you boys laughing about?”, she said with a smirk on her face. The two friends put their hands over their mouths, and she looked at Robbie. He tried to look serious and hold back his laughter but couldn’t and all three of them started laughing hysterically again and falling off their chairs. Chelsea couldn’t help but laugh and turned around saying, “I don’t want to know, but you boys watch out, you’re going to throw up your pizza if you laugh too hard.”

Chelsea and the rest of the adults returned to the dining room. Chelsea had a stack of robot birthday plates in one hand and a long knife in the other. She said, “You boys want some cake?” and they all nodded with anticipation. They lit the candles, sung happy birthday, and Robbie blew out the eight candles with ease. Chelsea pulled the robot candles from the cake and Robbie had noticed that they were not too damaged from the burn, as he had blown them out quickly. The boys were still holding back their laughter from their previous antics as Chelsea approached the cake from the side. “Let’s see, how do we cut this?” and she moved the knife slowly over the cake. Suddenly, she sliced the cake quickly through the whole width of the cake right at the neckline of the robot. The boys broke out in laughter just as she did it. She let them laugh for a bit. She chuckled herself and continued hovering the knife over the robot like a samurai ready to slaughter something. The boys had quieted with huge smiles on their face waiting for her next move. She stopped right over the crotch area of the robot, right where the legs attached to the torso. She paused, keeping her hand and the knife very still and level. She slowly turned her head to look at Robbie almost as if she was a robot, rotating her head without the rest of her body moving. Robbie put his hand over his mouth, trying to hold back the laughter that was about to burst from him. She smiled just a little and then forced the large knife right through the robot’s crotch, cutting off the legs from the torso. She didn’t even look away from Robbie and because of the force she used, she had plunged part of her hand into the cake just next to the robot.

“OUCH!” the other boys screamed, and they started to laugh again turning away.

Robbie still had his hand over his mouth and his eyes had started to water in his desire to laugh. Chelsea let go of the knife, leaving it in the cake and pulling her hand slowly away, covered in frosting and cake pieces. All the while keeping the same piercing look at Robbie, she brought her hand to her mouth and licked the frosting. She spoke, “um, good frosting!” and she smiled a big smile at Robbie. All three boys broke down in laughter and the whole room joined in. Everyone was laughing and the adults decided to give an applause as well. She bowed to them all and said, “want some cake?” as she reached into the cake for the knife with a huge grin on her face. Several adults shook their heads back and forth still laughing.

The boys resounded together, "Yes!" and it was done. The cake was served and enjoyed by all. They continued to laugh about the display as they ate it. Robbie took the knife and cut the eyes out of the robot and to the amusement of his friends.

Bigsby was in the corner still in his box. His sleep mode was interrupted by the large noise in the room, and he had started recording the dialog. He could not pattern match any of the voices in the room except one; it was Charlie as he had laughed and responded to the cutting of the cake. Bigsby had also pattern matched the use of a knife, and the stream was sent to his violation analysis engine to see if anything was to be flagged. Since the word cake had been used, and knives are appropriate to be used with cakes, the stream was rejected as a violation. The recording was marked and would be deleted that night as Bigsby's typical garbage collection algorithms run at nighttime.

"Can we open presents?" Robbie blurted out after his cake was gone from his plate.

"Sure, let me get this cake out of here", responded Chelsea and she lifted it from the table.

Frank went around the room and picked up everyone's plates and forks. He looked at Robbie and asked, "Did you like that?" with a silly grin on his face and raising his eyebrows. Robbie just nodded yes. As Frank left the room, the boys looked at each other and started laughing again. This would be a day they would never forget.

Chelsea returned, "Let's start with your friend's presents." Chelsea picked one small, flat package from the corner and handed it to Robbie. "This one is from Tom" and Robbie started ripping the packaging. Tom had perked up and was watching with anticipation. There were a whole bunch of cool stickers.

Robbie had seen these before and addressed Tom, "These are for our skateboards, right?"

Tom responded, "Yep, and the smaller ones are for drones and your bike."

"These are really cool", said Robbie with appreciation, "Can't wait to put them on. Thanks!"

Chelsea already had the second gift in her hand and handed it to Robbie. "This one is from Buzz," Robbie said quickly. He tore into the packaging, and it went flying. A clear plastic bag revealed fluorescent-colored targets or gates and Robbie recognized them immediately. "These are race drone gates! Awesome!" Robbie paused for a bit and looked at his Mom and said, "but my drone is broken."

"Don't worry mate", said Buzz, "until you get a new one, you can use my drone and fly it."

Robbie smiled and nodded his head. "Thanks Buzz, great gift", and they fist pumped.

"Ok, we have to keep moving", said Chelsea. "We now have the last gift from Uncle Charlie, Frank, and I. This is a big gift, so you're only getting one from us all, but we think you will like it." Chelsea handed the box to Robbie.

Robbie shook the box. "Easy tiger, wait until you see what's in it", Uncle Charlie cautioned. The aggressive shaking had brought Bigsby out of sleep mode, but since it did not continue, his response system did not flag danger and cause his lights to turn yellow. Realizing that there were still vibrations into his sensors through the box, he did not go back to sleep and instead stayed in ready state. Robbie started to rip the paper off the box as fast as he could. Quickly, he could see the shape of the robot,

seeing the legs first, then the torso, and then finally, the face on the picture of the box. Robbie noticed immediately the similarity of the picture on the box with the frosting on the cake.

He looked at his Mom and then Uncle Charlie and then back at the box. "OMG!" he said. Then he paused and started to laugh. "Guys, go get the knife in the kitchen and keep it away from Mom!" he said with a rye smile. The whole room laughed as they loved the humor of the situation.

"Open it!" Uncle Charlie said, "The suspense is killing me!" Robbie laid the box back down on its back and slowly pulled the top off the bottom. The suction again pulled the paper off and there it laid, the robot from the box cover except its lights were real.

"Hello! My name is Bigsby!" and Robbie dropped the lid onto the floor. He was surprised that it had spoken and in such a natural voice. As Bigsby remained on his back, he continued, "I really like your ceiling and especially the robot pictures around the edge." The whole room laughed as they realized the poor thing was pinned down into the box and couldn't see them. Robbie quickly grabbed the robot and extracted from the box. He put it on its feet on the table and then stood back. Bigsby decided to have a little fun, "Ten thousand years can give you such a crick in the neck!" Bigsby exclaimed in the same voice as the Robin Williams genie from Aladdin. He stretched his arms and rotated his head around as to stretch his muscles. "What are your three wishes, my master?" Bigsby said while turning on his rainbow colors to show laughter.

Uncle Charlie couldn't hold back, "That means he's laughing when you see that", and everyone one in room joined in the comedy of the moment.

Robbie asked, "Have you really seen that movie?"

Bigsby, in the same genie voice says "yes, yes, those nerds back at the factory set all us robots down on the factory floor on our charging stations and showed us every Disney movie! I've got them all memorized. Unfortunately, there were so many movies, they had to show them to us at 16x normal speed, so I have to do some calculations and conversions to get them back to normal." The whole room giggled and smiled as they saw that the robot was having fun entertaining them all.

Bigsby changed his color back to blue-green, formed a large smile on his face, and looked directly at Robbie. He said with his normal voice, "You must be Robbie, its very nice to meet you. Happy birthday! Congrats on turning 8 years old, I have not even turned one yet." Everyone chuckled.

Frank looked at Chelsea and mouthed the word "Wow!" Chelsea nodded her head and looked at Uncle Charlie, who was in tears.

She mouthed the words "Thank You" and embraced him. They both started to cry as they knew they had given Robbie something he would love. While still hugging, they looked back at Robbie still staring at Bigsby.

Tom and Buzz had moved to his side. Bigsby spoke, "and who are these two strapping young men standing beside you?" They looked at each other and started to laugh. "I'm Tom", as Bigsby turned his head slightly and bowed to acknowledge the introduction.

"I'm Buzz", said Buzz as he got the same response from Bigsby.

"How did you know who I was?" said Robbie.

"Well, its no mystery that you are the most awesome robot lover on the planet, Robbie. You are famous to all us robots!" responded Bigsby. The three boys stood in amazement as they let Bigsby continue, "and ... the picture your Mom uploaded to our website helped a lot!" And with that, the three boys laughed again.

Robbie looked at Bigsby and said, "Can you give me a minute, I want to thank some people for my birthday gift."

"Of course," replied Bigsby who nodded and turned his lights to green.

Robbie approached his mom first. "Thank you, Mom, for the best present ever! I can't believe its mine", Robbie said as he started to tear.

"Happy Birthday honey, we are very happy for you. But, you need to thank Uncle Charlie and Frank. They helped make it all happen too."

Frank didn't understand why he was included in that sentence except for agreeing to help pay for the robot, but he decided not to say anything. Robbie moved over to Frank and embraced him. This left Frank a little awkward because they had not hugged for a very long time. He patted Robbie on the back and said, "Happy Birthday" and then said, "It really was Uncle Charlie who did all the leg work. He found the robot and has done all the setup on it. He really went the extra mile."

With that, Robbie left Frank's embrace and moved over to Uncle Charlie. "Thank you so much Uncle Charlie, I absolutely love it!" Robbie exclaimed.

"We knew you would, Robbie, and we are very happy for you. This robot is not just a toy, its called a Companion Robot from WhyRobot. It's very sophisticated and is meant to be with you for years to come. We can spend more time later getting to know the details, but for now, just have fun with it!"

With that, Robbie looked at all three again and then went back to his buddies who were interacting with Bigsby. They asked Bigsby what types of physical tricks he could do and Bigsby was giving them a show. Pushups, slow motion front rollovers, slow motion back rollovers, and even silly looking side pushups while keeping his other arm on his head to show off. The one-armed pushups were the most impressive, it looked like Bigsby was a military robot preparing for battle. Robbie got an idea, "Hey, do you know the Macarena?"

Bigsby responded, "You bet, watch this." Bigsby started playing the song and then started doing the dance moves. The boys quickly joined in and soon, so had the adults. They were all dancing together in the dining room, led by a robot. Bigsby used his LED lights like they were a musical light organ, following the beat of the music, and changing colors as the song changed sections. Bigsby knew all the moves and led the whole crowd as they watched him for each arm movement and when it was time to rotate to a new direction.

Uncle Charlie thought, "this thing is going to transform Robbie's life. What a gas."

Robbie requested two more songs and Bigsby happily obliged with music, light show, and dance moves. The adults were in awe of how natural the robot was and how entertaining it was watching these kids

interact with it. "What an amazing technology!" thought Chelsea as she continued to participate in the fun. "Ok boys," she reluctantly announced, "it's time to watch the movie. We have to get Tom and Buzz home by 8pm as we promised. "

Bigsby asked Robbie "What movie are we watching?" and Robbie responded in a very low voice mimicking Arnold Schwarzenegger, "The Terminator." Bigsby quickly looked up and played internally a few movie clips of the movie. Within just a few seconds, Bigsby responded with "Hasta la vista, baby" exactly as Arnold had said it.

Robbie's eyes got wide and asked, "have you seen the movie?" to which Bigsby replied, "No, I found a YouTube clip" and started blinking rainbow colors in laughter.

The boys and Bigsby all watched the movie together. Robbie had Bigsby sitting on the couch right next to him the whole time. Halfway through the movie they paused and had a second round of pizza. Bigsby joked and asked if he could have a piece to which they all laughed. Hundreds of person hours had gone into developing Bigsby's humor algorithms. The engineers at WhyRobot knew that if the robot could pull off acceptable and fun humor, the robot would achieve acceptance much easier. Besides doing training exercises on real comedy footage into the humor generator, they had hired multiple comedian consultants who broke down the details and methods of good comedy that helped shape the algorithms and the AI learning engine to spot and generate comedy. Bigsby used laughter intensity and facial recognition to generate feedback on his delivery and effectiveness. So far, he was getting an internal score of 9.3/10 which is pretty high. The algorithm will start to shut down his humor attempts if the cumulative score falls below 7/10.

Bigsby had read multiple websites about the Terminator movie and he knew much more about the details than anyone else in the room. Bigsby turned his lights to green to show compassion and spoke up to Chelsea and Uncle Charlie just before the movie started. He said that there are some scenes that it is recommended that the boys not watch given their age. Without thinking that she was talking to a robot who had not seen the movie, she responded immediately, "oh, Uncle Charlie and I are watching it with them, and I'll tell them to cover their eyes if there something too graphic or sexual."

Bigsby responded, "I can tell you when they are coming up. I have them time marked. Would you like me to announce when a potential scene is coming up? Also, what are your parameters? The websites recommend the children this age avoiding extreme violence, gore, and sex scenes. The movie also has swearing throughout."

Chelsea paused and starred at Bigsby. She just realized she was having a parental conversation with a robot and it was making suggestions to protect her kid. She was stunned as she realized the detail and sophistication that was being demonstrated to her. Finally, she snapped out of it and responded, "The boys know all the swear words, so I'm not worried about that. Why don't you just announce when a cover your eyes scene is about to show, and I'll take care of the rest."

"Perfect", Responded Bigsby, "happy to do it." And with that, his lights turned from green to blue-green again.

Bigsby watched the movie with the boys and did as Chelsea had requested. Bigsby had read reviews that the movie was science fiction and did not depict real robots. The website did mention how the movie could create fear in people about robots, especially as they continue to get more sophisticated.

With this knowledge, Bigsby created a new analysis routine using inputs from the movie and website to do predictions on people's possible responses to him. This was part of the "Large Adaptation" option that Charlie had chosen during setup. This new analysis routine was installed in his human feedback prediction module and would now generate the recognition and response to fear or concern of a humans seeing Bigsby as a robot. The methods to help a human diffuse fear or concern were already programmed into Bigsby, but not the prediction and recognition of fear responses because the human encountered a robot. This routine creation and installation would also be reported to WhyRobot as part of agreed upon feedback in the signed agreement form. WhyRobot systems would analyze the statistics of the routine's usage and usefulness and if worthy, may get downloaded to all other Companion robots in the field and those being manufactured as well.