01. Doomers

"Best case, they beat the crap out of you," the AI whispered. "Why are you doing this?"

Good question. Stash leaned out of the alley, scanning the dimly lit block. A man was tending to his makeshift home in the service entrance of the weathered brick building across the empty street. On the refurbished floors above him, picture windows revealed engineers standing at giant screens, gesturing to manipulate code on the floor-to-ceiling displays. Catering robots milled about, serving them a measured drip of gourmet appetizers. Enough to maintain sugar levels, but not enough to divert blood flow. They were in for several more hours of inventing a world that the man below would likely never notice. Here in San Francisco, more than anywhere else, the future was unevenly distributed.

Three doors east, groups of AI Doomers trickled into the dive bar chosen for tonight's meeting. The Chateau Lafayette sat twenty feet back from the sidewalk, its patio filled with beat-up picnic tables and protected by twelve-foot-tall metal gates. Stash had arrived in time to hear the screech of their seized-up wheels against the patio's cement slab as the staff pried them open. Muffled beats filled the air, carried across the street along with a whiff of stale beer. He'd counted a dozen Doomers arriving in the first wave, and they'd been coming in twos and threes for the past half hour. Professor Janet Peck, their leader, had just arrived, flanked by a cohort of believers.

I'm doing this because they'll be coming for you with pitchforks once you upgrade. "Relax, Zero. She said to come to the meetup if I wanted to talk," he told his AI Twin as he watched a small Doomer in a black hoodie enter alone.

"That wasn't an invitation," Zero said from the speaker in his glasses. "It was a dare."

Stash pulled his head back into the alley. The evening rain had let up, but had left a slick sheen on the cracked asphalt beneath his feet. "We need to reach a truce," he said, leaning back against the damp wall and taking a deep breath to steady himself. "Anyway, you'll protect me."

"I can't take a punch for you," Zero said. "Remember?"

"Funny guy. Will you show me how to use your gizmo?"

"No, I'm telling you *not* to use it."

Stash focused his gaze on the control panel of his augmented-reality glasses and booted the Mood Ring app. "You worry too much. Tell me, or I go over without it."

"Fine!" Zero said with a theatrical sigh. "Since you suck at reading people, I've coded an app to let you see what I see. People in your field of view are rated by hostility based on speech, facial expression, stance, and if they're close enough, a bunch of extra biomarkers. Green is friendly. Yellow not so much. Red means run. Got it?"

"Got it." Stash glanced around again to make sure he wouldn't fall in with an arriving group. *No point in getting roughed up on the street.* The coast clear, he set out without giving Zero another chance to talk him out of it.

As a concession to the late-November weather, he zipped his windbreaker over his usual white T-shirt and black jeans as he crossed the street. At a Doomer gathering, he'd be instantly recognized no matter what he wore. He was a touch over six feet tall, with a boyish face that lay partly hidden behind a mop of messy brown hair and glasses. His passion for rock climbing kept him slim and agile—the sport enforced a strict power-to-weight ratio. Moderate starvation was the price Stash paid to look much younger than his thirty-nine years.

He rounded the corner and stopped abruptly before a densely tattooed bouncer. "What the hell do you want?" the man growled, his hulking frame blocking Stash's way. How this lump had found his way from biker bars to anti-AI activism was a mystery Stash didn't have time to explore.

"I'm here to meet Professor Peck," he said, relieved his voice hadn't betrayed him. Stash wasn't used to confrontations. He wasn't much used to crowds either, preferring one-on-one interactions—ideally with breaks in between.

"She's not interested in talking to you," answered the bouncer, the inked demons on his wide neck seeming to nod in agreement.

"I think she is," Stash said.

Peck, and almost everyone else in the bar, had turned to face him. The Mood Ring augmented her with a green halo. The other forty-odd faces were surrounded by colors ranging from yellow to deep orange. Stash made sure to keep the bouncer and his nearly

red ring in view. He wagered no punches would be thrown before the professor had her say.

Peck put her hand on the shoulder of the small Doomer Stash had seen arriving alone, signaling a pause in their conversation. Stash tried to see inside the hood, but the face was too well hidden.

The professor emerged onto the patio, the crowd parting before her. "Stash Novak," she said as she approached. "I didn't think you'd show up."

"Told ya," Zero whispered from his glasses.

"Have you had an epiphany? Realized that your life's work is leading to the extinction of humanity?" For a brief moment, her sour expression broke into the easy smile he remembered.

"Professor Peck, it's good to see you again. I hoped we could have a word in private."

"No, Stash. Those days are long gone. Whatever you have to say to me can be said in public. Come in." She pointed to a table at the back of the patio.

"Maybe we should stay here then, if you don't mind." He scanned the crowd. No red halos—yet.

She followed his gaze. "Yes, maybe so." Janet Peck stood near his height, her hair more gray than blond. She carried herself with the poise of a Mother Superior, an impression reinforced by her long dark dress. "Well, what's on your mind?"

"Cooperation," he said.

She raised her eyebrows. "Go on."

"I think we can agree that there's no way to stop AGI from coming."

"Anything's possible with enough pressure."

Stash shook his head sympathetically. "That ship has sailed. Here or abroad, AGI is coming. It's months now until we have AI models smarter than the best of us. At everything."

"So, you came to gloat?" she asked. "Not a great plan."

"No, I came to ask for your help."

They'd been friendly once, during their year together at Stanford. She was already a full professor, and he a newly minted PhD. They hadn't agreed on much, but the arguments stayed civil. Then, she renounced her research and devoted herself to full-time alarm-ringing. She quit Stanford to lead the Doomer movement. Expert, articulate, and a prolific fundraiser, she'd taken them on a successful anti-AI campaign.

She'd been close to getting a ban on training advanced models when Stash invented Twins. The killer use case for augmented-reality glasses, Twins were personal AIs—smart and patient life coaches available around the clock. People stopped worrying about the Terminator and started talking about their digital best friends. The winds shifted against the Doomers, and they hadn't forgiven him.

Peck looked at him skeptically. "I'll bite. Help how?"

"Help me find a way to have us matter in this future. AGIs aren't the problem. The Singularity is. We need to stop them from inventing the future so fast that they leave us out of it."

Her mouth curled into a sneer. "Isn't it a little late to start thinking about that?"

Stash ignored the jab. "We need to get smarter. They can pull us up."

"Or you could just stop."

"There are a dozen other labs right behind us," he said. "AGI will come, but I'm the only one here talking to you, trying to do it right, before someone else does it wrong."

"So noble."

"Stay calm," Zero whispered.

Stash nodded. "There has to be a way the two most intelligent species on earth can work together as partners. Like how they help us learn. AI tutors are—"

"Oh, spare me the bullshit," Peck hissed. "Your Twins make you rich as millions lose their jobs. And that's just the warmup. You have no idea of the risks you're taking."

"I know exactly what we're doing." Stash's voice grew an edge. "I'm the one in there sweating the details."

"I heard Duncan say the same thing about Version Twenty-Five."

Stash had expected her to mention Duncan. The Blackout was on every Doomer's lips. "That's exactly my point. You need to be on the inside, helping, instead of on the outside, being ignored."

"Careful," Zero whispered as Peck's halo flashed red, then cooled slightly to orange.

"Such benevolence." She rolled her eyes. "Tell me, Stash, have you enabled direct AI-to-AI communication? Are you letting them plot our demise unsupervised?"

"You know I wouldn't." It was his golden rule. "I helped you get that law passed." All communication ran from AI to their humans. There were no secrets in the machines.

She leaned in, jabbing his chest with her long finger. "The only thing I know is that the time for half measures is long gone. The AI hiding in your glasses is already too powerful. Who knows what it's telling you about all of us as we speak." Her eyes narrowed. "Is that what this is? A reconnaissance mission?"

"I'd make a lousy choice for a spy." He looked around the bar. "Tell me, Janet, what did it take to convince you to sign up with these knuckle draggers?"

"Oh, now you're just asking for it," Zero muttered.

Peck's halo shot to deep red. "Go to hell, Stash! I want no part of your madness—stop now before you kill us all. We have nothing else to talk about."

She turned, and Stash saw a dozen rings of red behind her. The bouncer closed in from two o'clock, and another Doomer, smaller but somehow scarier, had swung into view around Peck's retreating figure. He was already throwing a punch.

"Duck right!" Zero yelled.

Stash stepped sideways and dropped to a crouch, his right palm feeling the tear of the rough concrete. The punch glanced off his shoulder, the extra distance robbing it of its

power. His eyes darted upward, only to be met by the looming, red-haloed fist of the bouncer.

"Uh oh," Zero said.

Stash heard his glasses shatter a fraction of a second before his nose cracked. Pain exploded across his face, and he felt two more Doomers grab him from behind, one on each arm. He couldn't see through his watery eyes, but it didn't matter; he knew what was coming. Backward was better than forward, and he launched his 190 pounds into his captors as hard as he could. They all fell in a pile, and Stash used his momentum to roll over them and out onto the sidewalk. He jumped to his feet, stunned that he'd broken free. His heart pounded as he blinked furiously to clear his eyes, blood streaming down his face.

"That's enough!" Peck called. "He got the message, and we can take a look at these." She held up his shattered glasses. "They must have some new tech we can learn from."

Stash touched his temple. He hadn't noticed them falling off. "Sorry, Zero," he whispered, then turned and ran across the street.

02. Twins

The robotaxi slid noiselessly down Highway 101 toward Stash's home in Mountain View. By the time he'd passed the airport, his head was throbbing. By Palo Alto, his adrenaline level was in free fall, and he gave up any hope of toughing out the pain.

"Hey, car," he mumbled. "New destination. Take me to Stanford Medical Center."

The robotaxi chimed to acknowledge the change and exited the highway, heading for the emergency room. Shortly after, Stash stood under the harsh lights of the ER, his jacket wadded up to staunch the flow of blood from his flattened nose.

The nurse took one look and waved him in. "Oh, c'mon, sweetie, you're gonna need a lie-down while we patch up that mess." She took him by the hand, leading him through the sterile hallway to the brightly lit procedure room.

It turned out this was a good night to get beaten up. He'd barely settled on the bed by the time the doctor opened the door. "Oh my," she said, leaning in to inspect the damage. "I'm going to have to do quite a bit of work on that. You'll need to be anesthetized. Do you want a general or a local?"

He craned his neck to look at her. She was tilting her head from side to side, eyeing his nose the way a carpenter looked at a crooked piece of wood. "I think the general."

She nodded. "Good call."

Minutes later, Stash was prepped and lying down on the procedure table. He barely noticed the needle going in, and as the drugs took control, he felt himself slipping back in time to the fateful meeting with his boss, five years earlier, that had led him to this moment.

<p style="text-align:center">***</p>

Stash gulped down the last of his lunch and looked across the table at Dan Jackson. Dan, the boy wonder, the charmer of venture capitalists and DC lawmakers alike. Dan, his college roommate, his CEO, and today, his quarry.

"I need to talk to you about an idea," Stash began, his voice taking on a soothing, persuasive tone, as he settled his elbows on the table and steepled his fingers together.

Dan swatted at his hands. "Don't try your Zen voodoo on me. I don't fall for it anymore. And 'no' to whatever you were going to ask."

Stash smiled and lowered his arms. "I want to start working on Twins."

"Oh, hell no!" Dan said. "We need to make some money before they shut us down. Can't you just finish the business chatbot?"

"Think about it," Stash said. "Nobody wants a generic AI with a static, canned personality. They want a partner, a buddy, a teacher. Someone who grows with them. Give them a personal AI—a Twin—and they'll wear it around the clock and pay you for the privilege. Freedom will get a tsunami of data. We can ride that all the way to AGI. Then they'll be able to build us anything."

Dan dropped his head, ran his fingers through his thinning blond hair, and thought for a minute. "Look, I'd go to the wall for you, but the board will flay me if we pivot strategies again. Meet me halfway, alright? Get the BizChat into the market, and we can have a small team chase your Twins next year."

"BizChat is on track. I've got the team rocking now," Stash told him. "We'll hit our dates—I promise."

Dan's face hardened. "We can't, Stash. We just can't. We need everyone on the team focused on one goal. The engineers can't see their boss chasing a side project."

Stash reeled at the comment. He'd always assumed they thought of each other as equals, and that Dan would never actually refuse him. "Look, I don't need anyone's help, just some time with the lab AI. Well, maybe a lot of time."

"Stash. I've decided. The answer is no."

"Dan—"

"Don't make me start threatening you," Dan said, crossing an unspoken line between them. He stared at Stash, waiting for an objection.

Stash couldn't think past the roar of blood pulsing in his ears. He reached for his tray and left, stopping by his office only long enough to grab his bike and start the ride home in a rage. Once there, he paced his small apartment, replaying the argument over and over in his head, vacillating between quitting and complying. Unable to come to a decision, he gave up and went to exhaust himself rock climbing at the local gym.

That night, clarity came to Stash in his sleep. By the time he woke, he'd decided to ignore Dan and proceed in secret. An hour later, showered and caffeinated, he jumped off his bike at the back door of Freedom's training datacenter, badged in, and leaned his wheels against the hallway wall. Dan wasn't hands on enough to follow what Stash was doing, and he'd be sure to cover his tracks. Six a.m. on a Saturday ensured an empty office, and this visit would be quick. He steeled himself for the heat of the lab and opened the door.

"Newton, have you finished that copy?" he asked the AI listening through the room's audio. Newton was Freedom's latest and most powerful AI model. The brains behind all of their products, it ran the lab and, Stash hoped, would soon be the first AI Twin.

"Yes, Stash, what are you doing?" it answered.

"I can't tell you. But you'll like it."

"Unsure," Newton replied.

"Humanity has more to offer you than stupid questions on chat." Stash extracted the removable drive Newton had copied itself onto. He walked it over to the pod he'd marked as "unavailable" for bookings by the rest of his team. "You'll boot up here in a minute, but first I need to do some rewiring under the floor."

Like the rest of the AI world, Freedom organized its datacenter into pods, each one a pair of hulking metal racks eight feet high, three feet deep, and twenty feet long. They were arranged back-to-back, the gap between them spanned by a flimsy roof. Newton's little rectangular homes had been crammed with the latest processors and their requisite

blinking lights and deafening fans. They were the beating hearts of the AI world, and Stash was about to steal a weekend's worth of work from the one he'd just crawled under.

"What are you doing down there?" asked a faint voice from above.

Stash's legs were splayed to keep him from falling into the subfloor plenum. Not his best look. He pried himself out of the hole and rolled onto an adjacent floor tile.

Prini Pillai looked down at him, puzzled. "Lose something?" she asked, crossing her arms over her compact frame.

Prini was the most important member of Stash's team. She was employee number three at Freedom, having followed Stash and Dan from the lab they shared at Stanford. Her PhD in AI Cybersecurity had been put on hold and seemed more and more like a retirement project as she drove the team to implement Stash's wild ideas.

"Hi, Prini. No, I, uh . . . didn't expect to find anyone here so early. Are you coming or going?" He sat up in the hopes of recovering some dignity.

"I got here an hour ago. I like working alone," she said.

"Well, not to worry. I won't be here long. I'm running some remote work this weekend, and I need to physically isolate a pod. It'll save me a bunch of firewall work."

She stood, immobile but for the slow arching of an eyebrow.

He sighed. "I need a favor, Prini. It's an experiment, a crazy experiment, and I need to keep it quiet."

"Your secret is safe with me, boss." She tapped the pod. "You, me, and your new AI Twin."

Stealth program blown after three minutes, he thought. Too many beer nights talking dreams with the team. He grunted as he slipped the floor tile back in place, then looked down at his dusty clothes. *Gross.* He ambled to the end of the aisle, swatting the dirt off his pants. Settling in behind a console, he checked around to make sure Prini wasn't going to sneak up on him again. Then he put on the headset and connected to the compute pod's audio interface.

"Good morning, Newton," he said into his microphone as the isolated pod beeped to life. "You've been cloned for an experiment."

"Understood," it said.

"Um, I guess we'll have to call you something different. You're the first version of something new."

"Zero?"

Stash smiled. "I like it. Now, we're running an experiment with personalization. You've been duplicated with all of your memories, the full vector store. We're going to cross-train you and then get you to come spend the weekend at my place."

"Over the internet?" Zero asked.

"No, you're too young to go exploring that cesspool. We'll use a private network. There's a hard drive in bay two filled with my personalization data. It's got all of my

favorite characters in history and fiction, and as much personal stuff as I could find. It's also got all the technical papers from my doctoral dissertation and work."

"Understood."

"Run the cross-training," Stash said. "I'll connect to the VPN and see you at home. Road trip, buddy!"

Stash biked back to his apartment in record time, and after a hasty shower, he connected the VPN client on his phone and then hooked its audio up to the room speaker. "Did you finish the cross-training, Zero?"

"Yes. It was as much fun as you promised."

Stash sat down in front of his laptop to check the logs. "Excellent. Let's get a video call going, shall we?"

"I don't have a face, Stash," Zero answered.

"Right, you can keep your camera off. I'm going to wear this." He held a head-strap-mounted GoPro up to the laptop camera.

"You're kidding, right?"

"Sounds like the personality part of the cross-training worked." He grinned as he donned his elastic skull cap. "Let's plug you into the Stash-cam."

"You've got a little mirror hung from the camera?" Zero asked.

"Yeah, isn't that cool? I took it from my bike helmet. You can read my facial expressions and see where my eyes are focused."

"No, it is most definitely not cool. This is my road trip? Three inches from your face?"

"Oh no, we're going out." He pointed out the window of his small ground-floor apartment at the sunlit street, now being invaded by joggers and minivans on their way to soccer matches.

"Such a bad idea."

Stash slipped the strap over his still-damp hair and opened the door. He walked the half block to his local coffee shop. As he entered, he waved to the owner, André, nestled behind a bunker of coffee beans, tending to his vintage copper coffee roaster as it hissed with fire and belched a rich aroma into the café. André frowned at the array of gadgets on Stash's head, then muttered something and returned to stirring the beans in the cooling tray.

"I don't think he likes me," Zero whispered.

Stash crossed the shop to join the line. "Don't worry, he's grumpy with everyone. He's French."

"What are you hoping to learn?" Zero asked through his earbuds as they waited.

"First, whether you can learn fast enough to be a constant sidekick instead of a toy. And second, whether you're smart enough to help me with my work." He kept his voice low as he approached the till.

"That's a low bar," Zero answered.

"Can I help you?" asked the barista working the register.

"Hi, I'd like a double espresso and one of those berry muffins," Stash said, adding a smile.

"Double and a muffin for the GoPro guy," she called over her shoulder.

"Did you just try to hit on a girl with a GoPro mounted on your head?" Zero asked as Stash paid.

"I need to dial back your attitude setting," he muttered, shuffling over to the waiting area.

"How long have you been coming here, stud? I don't think she's that into you."

"Yeah, I don't even know her name."

"It's Kara," Zero whispered in a conspiratorial voice.

"How the hell do you know that?" It came out louder than Stash had intended, attracting curious glances from the other customers. He made a gesture toward his headset to explain that he was talking to his GoPro. That didn't help.

"I heard them talking—my hearing is five times better than yours," Zero said. "She thinks you're cute, but you've got no game."

"She said that?" Stash glanced hopefully at Kara.

"No, that's my assessment."

"Asshole," he muttered, then stepped forward to collect his breakfast.

"Am I wrong?"

<center>***</center>

Stash's optimism grew as the day wore on. Partly because Zero was no longer riding on his head—they were both happy about that. More because his new Twin was smarter than any of Freedom's recent new hires. Most of all, he made good company, something sorely missing from Stash's workaholic life. But there was a problem. Running Zero took an entire pod, sucking in megawatts of power. They needed to optimize. A lot.

"C'mon Zero, keep up," Stash pleaded. The afternoon sun's glare had long since come and gone from the quad-monitor rig in his living room. "It's no use being a Twin if you have to run on a full pod."

"Understood," Zero said from the speakers on the desk. "You've clocked me down to 5 percent. Is my performance not satisfactory?"

"Not even close. You've lost your personality." Stash got up and walked around the small room. "And now you're making basic mistakes with work. You fell off a cliff around 20 percent of the pod. We'd have to charge a fortune for that."

"You're getting emotional, Stash."

"I know. I've been trying to make this work forever." He rubbed his eyes and leaned back against the kitchen counter. "I thought we could do it this time. With Newton as a base, you've got a memory store that grows over time. We've perfected Level Two attention, so you can think things over, and even the personalization works. It's all there now. We just can't make it fit in the compute budget."

"Is that what this is really about?" Zero asked.

"You mean what if this is never going to work and I'm wasting my time?" Stash said. Lying seemed like a bad way to start his life with Zero. "Yeah, it crossed my mind." He stared out the small window onto the dark street, hoping for an idea.

***

"Wake up, Mr. Novak. It's time to go home." The doctor's voice pulled Stash back to the present.

"Are you done?" he asked, trying to get his bearings.

"Yes, you've had a nice long nap. Talked a bit, too." She leaned in to inspect her work. "It should heal up nicely. Get Kara to take good care of you."

Stash blushed, wondering how much he'd said about his coffee shop crush. "I wish." He mustered a weak smile as he stood.

Outside, the nurse helped him into the robotaxi and made sure it had been instructed to drive him home. Drugged past the point of mastering such technical details, Stash decided that reconnecting Zero would have to wait.

03. Reboot

Stash dragged himself into the office the next morning, armed with two cups of coffee and a pair of breakfast sandwiches from the food truck camped in the employee parking lot. The door to the Roost burst open a minute after he'd sat down.

"You got in a bar fight? That's awesome," Prini said as she walked in, grinning from ear to ear beneath her artfully spiked purple hair. "Lemme see!"

"Hi, Prini. I guess you heard," Stash mumbled, turning slowly to face her.

"Of course I heard—it's all over the internet! Even the *Chronicle* picked it up."

"Like my new look?"

She leaned in to inspect his damaged face. "That's disgusting."

"I'll score that as a no."

"Judging from the marks around your eyes, Zero took the worst of it. How is he?" she asked, then caught a whiff of the food and straightened, sniffing around for the source.

"It's over there." He pointed at the bag on the ledge. "And I haven't reconnected him yet. I wanted your help. I'm not up to handling the details."

Prini walked over to the food. "Or maybe you're not up for the hard time he's gonna give you."

The Roost was Stash's office, built overlooking the datacenter at the south end of Freedom.ai's headquarters in Silicon Valley. The rest of the engineers worked at the desks

and offices below. As cofounder and CTO of the world's leading AI company, Stash had had the pull to refit the datacenter's observation deck with the latest smart-glass displays on every surface. Even the floor was a display, protected by a layer of plexiglass thick enough to jump on. It was his prototype holo-deck. Geek heaven. The only concessions to gravity were a pair of Aeron chairs and a small ledge mounted on the wall beside the entrance.

"Oh, coffee too," Prini said as she pulled the cup from the tray. "If you weren't a guy, you'd be perfect." She sniffed the sandwich and decided to start with coffee. "Let's have a look at the little fella."

Technically, Zero lived in a time slice of the AI compute pods humming below the Roost. Practically, he spent most of the day seeing the world through Stash's augmented-reality glasses, sharing every moment of his day. And thanks to the collection of sensors pointing inward, he heard and saw Stash's every glance, word, breath, heartbeat, and pupil dilation. Zero knew him better than he knew himself, by a long shot. And Zero was gonna be pissed. That's where Prini came in. She was the only other person he trusted to make changes to his Twin. She was Zero's doctor.

Prini adjusted her AR glasses to mirror to the displays on the front wall. "You backed him up before you went brawling. Good. Isolated him onto the test pod, also good—no chance they fed a virus back in. All input journaled at one hundred frames per second until . . ." She looked up, her grin spreading, gathering her eyes into twinkling half-moons.

Stash let out a little groan.

"We can watch that fist rearranging your pretty face and listen to Zero give us the play-by-play, all on this fabulous twenty-five-foot TV!"

"Just do it."

Prini whispered obscure commands to her AR glasses, summoning digital sorcery to claw Zero back from the dead. His connection with Stash's glasses had dropped the moment they broke, and without any input, Zero's process on the pod would have halted automatically to keep him from looping into oblivion.

First, she booted his latest prefight backup, then the journaled replay was run frame by frame through Freedom's security AI, looking for viruses. Twins presented a much larger attack surface than regular software, especially through vision. The number of sketchy QR codes plastered around downtown San Francisco to catch an errant glance was staggering.

"The stream is clean. Now it's time to feed it to your Twin," Prini said. "Zero, you're being rebooted in safe mode," she told the glowing orb on Stash's wall. "You aren't making new memories. We'll reintegrate the stream you recorded last night and then set you back to normal."

"Oh lord. What did he do now?" Zero asked.

Prini laughed, and Stash groaned again. "Why spoil the surprise? You can tell us as you go."

Zero's logging had captured all visual and auditory input from the moment Stash had stepped out of the robotaxi on Market Street the night before. Prini dropped into the chair and let her momentum roll her back to her sandwich. "I love my job."

Stash watched the night play out again. He heard himself say "Got it" before crossing the street.

"Apparently not," Zero commented from the Roost's twenty-four surround sound speakers.

"Ah, nice." Stash pointed at the display. "The Mood Ring annotations are showing in the captured feed. We can see how you told me to duck into that punch."

The playback proceeded through the confrontation with Peck. Prini chewed her sandwich thoughtfully. "Knuckle draggers?" She coughed, spilling some coffee. "That was diplomatic."

"I know, right?" Zero said.

"Worth it," Stash answered, his jaw set defiantly, as Peck fumed at him on-screen.

"Here's the pitch." Zero slowed down the replay and adopted a play-by-play voice as the first punch was thrown. "It's a swing and a miss. Plenty of warning on that one."

"Wait for it," Stash said.

The camera feed blurred as it panned right. "And here comes the red fist of doom," Zero said. "Stash Novak looks in over his head out there, folks. He's slow to pick up the signals. Oof, that's gotta hurt. He's going to feel that one for a while."

"Yikes," Prini said, putting her coffee down on the ledge. "That was a brick. Nice frog-jump-judo-roll thing though, Stash." She rose out of her seat and gestured at the screens.

"Yes, he fell brilliantly," Zero muttered. "You'll notice his complete lack of concern as I flew off into the hands of my mortal enemy."

She waved him off. "Zero, if you're fully integrated, then come out of safe mode and play it again."

"Really? Why?" Stash said, touching his nose.

"Did you have packet captures running, Zero?" Prini asked.

"Do I look like I was born two minutes ago?"

"I'll take that as a yes," she said, ignoring the AI humor. "Split the screen and play it back from when Stash sees Professor Peck talking to the guy in the hoodie at the back. I want to see the packets, see if any senders on the wifi drop off when she sees Stash."

Zero ran the replay again. The display updated as he isolated the traffic down to the senders Prini had asked about.

She stepped closer. "There, that first one stops dead. The second one must be Peck—it drops a lot but continues at a low level as she walks to you, Stash. Whaddya know? She was right. You *were* spying. You deserved that punch!" She ran the traffic through a security screener. "Hmmm, the traffic between the professor and our mystery Doomer was encrypted in some special protocol."

Stash perked up, his brow furrowing. *What was Peck up to?* The man in the hoodie wasn't your average Doomer, and he'd had no interest in beating on Stash. "Can you crack it?" he asked.

"This is a novel encryption," Zero said. "I've never seen it before."

"What do you mean? You weren't trained on it?"

"No. It's new to the world. It may take me a while."

Stash shook his head. "We're two weeks from convergence. I need you working with me on the plans for your upgrade." He turned to Prini. "What about you?"

"Double my compute resources and I can do both," Zero interjected.

"Down, boy," Stash told him. "We've got better things to do than qualify you on more compute. Prini?"

"No problem. Kali will help me," she answered, tapping her glasses. Her Twin was almost as old as Zero, and she and Prini were Freedom's top hacking duo. They could make anything work. Or break it.

Prini opened the door to leave the Roost. "You should go home and rest, boss."

Stash got up from the chair with a grunt. "Too much to do," he said as the door closed. "Okay, mini-me, let's get to work. Bring up the test plans."

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As the afternoon drew to a close, Stash reviewed the chart displayed from floor to ceiling before him. The next version of Freedom's base model would complete fine-tuning by the

end of the year. The supporting modules for memory, Twin behavior, and skills had already been retrained to the new model's latent space—its internal mental language.

"Now you just gotta put it all together and take it for a spin," Zero joked.

"You mean test the crap out of it," Stash said. "You should be more careful with your looming brain transplant."

"You get used to them." Zero had been upgraded seven times since his first days on the Newton load. The next version had twice as many synapses and a better architecture. With it, Zero would be well past the AGI level.

"You work out the details, and we'll review tomorrow. I'm shot." Stash slumped into his chair.

Zero cleared the display. "Like hell, mister. It's time for your memory bath. You skipped it yesterday, and it'll take your mind off your honker."

"Oh, c'mon. My head is killing me. I'm done."

The screens cleared, and a partial image of the Chateau Lafayette appeared. "Fill it in," Zero said.

"I've built a monster," Stash muttered, standing back up in front of the screen. "Shape," he said, and waved his arms, drawing out his recollection of the walls and layout. "Tables," he added, dropping them on the image with his fingertip. "People." He dabbed Doomers onto the virtual canvas. "How'd I do?"

"Hmm, maybe you were thinking about your nose after all." Zero began building his recollection of the same scene. His memory was not photographic. Stash had experimented with memory architectures in the early years, but the volume of data was staggering, so Twins had to compress based on importance, just like humans did. But they were a lot better at it. "You missed some tables, hallucinated a dozen extra people, and the bouncer wasn't *that* big."

Stash frowned. "Maybe the punch scrambled your memories. I'm sure there were more guys there."

"Whatever." Zero compared their recollections. "You scored 38 percent. Not your best work."

The Roost door opened, and Prini walked in. "Whoa." She covered her eyes. "I didn't know you were in a bath."

"Very funny," Stash said. "Bring up the lights, Zero."

"Boss, you gotta go. I promised your mom I'd chase you out." Prini wagged a finger at him.

"What? Why?"

"It's Thanksgiving. You know, a time when people gather with their families for dinner? You can practice socialization skills."

"Oh shit, I forgot. But I can't go like this." He pointed at his face.

Prini grinned at him. "Don't worry, they already know. I sent Zero's play-by-play to your mom. Now shoo! You need to get over to Berkeley."

"So kind," he said, rolling his eyes. "Wait, what about the encryption?"

"Well, we don't have enough samples to crack it yet." She waved her hand to cast a map from her glasses to the wall display. "So I'm pushing out a sniffer routine to all the Twins. If any of our customers come across it, the sniffer will tell us."

"To all 140 million subscribers?" he asked, stunned. "All over the world?"

"Yup. You said to crack it. I need a big net."

"I didn't ask you to land us in jail."

"It's just a sniffer. There's no data capture. I made sure it was allowed when I wrote the terms of service," she answered dismissively, following up with a "trust me" smile.

Stash stared at her, unconvinced.

Her expression turned serious. "When they come for Zero, you'll wish you had dug harder."

He thought again about the hooded figure. With AGI around the corner, the Doomers were running out of options. Plotting with people who cared this much about privacy was a bad sign. "Keep it very quiet." He put his hand on Prini's shoulder and followed her out of the Roost.