

CYBERPUNK

BORG&Beautiful

Kesenia Ashland

Chapter 1

“Ms. Zaitsev, if you please.” The plainly dressed and conventionally attractive professor gestured toward the podium with a sense of pride. His eyes tracked Susanka’s as she rose from her seat at the lab table and glided toward that worn but revered box he indicated. As she took her place at the podium, her dark brown eyes smoothly released the gaze they shared with the kind, scruffy face and moved over the four semi circular rows of 2 person lab tables making up the class by turning her head, not her eyes within the sockets.

Her chin was tilted slightly upward as her lips parted to let loose her understanding of how the layers of skin contained the network of blood vessels and nerves. Each syllable popped off of her tongue in an even staccato, like they were bouncing off of a snare drum, except her R’s, which lingered between her lips in tight triplets. Even the gesticulations of her bird-like fingers were curated to sweep through or tap the air to express nothing short of clear intentionality. Information was effortless for Susanka, especially when it came to subjects she enjoyed, and there was nothing more joyful to her than order.

Order is truth, and truth is order.

When she was satisfied with her answer, Susanka’s head turned her eyes toward the professor’s once again, but this time, she let the gaze become a side-eye as she turned to move toward her seat. She wasn’t “all that”; she just wanted to communicate a sliver of attraction, not just at the man, but also for anyone who was looking at her. It wasn’t often that she could share that with the world around her, so it became important to her to show how capable she was of expressing it.

As she came to rest on her creaky aluminum and plastic stool, a sharply whispered “hey!” chimed from over her right shoulder. Susanka turned toward the sound and found the wide eyed bidding of a strangely attractive girl with a mullet and baggy, floral print overalls, sitting in the chair diagonally from Susanka’s. “Hey, I’m Maya,” she whispered. Maya was leaning over the black surface of the table with a hand gripping over the back edge like she was about to fall off her seat, into some deep chasm behind her. Now speaking quietly with her voice, “That was pretty great up there! Hey, could we, like, study together before the test?”

At the head of the classroom, Mr. Sorenson slowly paced the open area between the lab tables and the curved projection screen as he expanded on the delicate systems between the dermis and the muscles. To his right and Susanka’s left was the door to the hall beyond the classroom, and along that same wall was a journey of lifesize illustrations featuring

different systems within the human body. The wall opposite the door was set with a panoramic window that spanned from the front of the class to the back.

Susanka whipped her head toward the front of the class as the professor spoke, the front ends of her angled bob lazily chasing behind her chin, then back to Maya again within the same second. Her shoulders bounced a half an inch as she made a quick shake of her head, but smiled, whispering, "After class?"

Maya bounced her head a couple of times and sat back, giving a little, friendly smile. "Yeah, sure," she whispered warmly.

When the class was over, as Susanka was detaching her satchel from the frame of the stool's backrest, Maya came down the aisle, rotating toward Susanka with her digi-pad held up with the bottom edge at the tip of her nose in a funny presentation. "Hey, gotta delta, but here," the pad swiveled down to point at Susanka's and Maya swiped down the glossy screen at it. "Call me?"

Susanka looked at the table where her digi-pad was, just as the notification lit up her own screen. "Kay, Maya," she said with a little smile.

As Susanka's pad was sliding into her slender satchel, the professor approached in a polite crouch that would place his head in the Ukrainian girl's field of view, and rose as her gaze did, then he landed at the corner opposite her. "Ms. Zaitsev." There was a playful spring in his lilt. When her eyebrows went up in question, he continued warmly, "I'm curious if you're the kind of person who likes putting what they learn in the classroom to the test?"

The question had such an obvious answer that she tilted her head, furrowed her brow and slacked her jaw a little to show her bottom teeth. "Isn't the point of classwork to apply what we learn in a professional capacity later?"

His head rolled back as he barked a laugh and he tilted his head in the same way, his smile betraying a sliver of embarrassment. "I'm trying to invite you to be an official peer coach. It's just two hours a week, but your answers to live questions will be observed for accuracy, and you'll be given extra credit at the end of the semester."

She looked down. "I cannot be here for much longer than I already am. Sick mother at home."

He tapped the digi-pad through the ivory colored canvas satchel on the table. "You can do it from home, if you want, and after one supervised semester, you can do it to make a little extra coin whenever you feel like being of service to your fellow students."

Susanka looked from under her bows at him with a little smile. "I would like that."

He drummed out a chipper percussive expression on the corner of the table like a little victory song as he said "Very well! You can claim your two hours on the online class calendar any time, but it's first come, first serve! If you want specific times, you might want to choose them as far out in advance as you can." His head was cocked down in a theatrical scold and he held up a single finger.

She responded with a comical, tight-lipped reluctance and said, "Yes, professor" in a playful-yet-professional singsong.

Susanka was almost always aware of how artificial her emotions and mannerisms felt, like she was always teetering along the edge of the uncanny valley with an unfortunate predisposition toward the emphasized structure that is more expected from robots and computers. As a result, any expression beyond giving or getting information was truly an effort.

As she left the lecture hall, Susanka considered the contrast between how alien it was to craft expressions and how much routines felt like home. There was a sense of ease in knowing that the District bus would be at the same corner she walked to after classes at around the same time each day. Each day, she would plop down in the same way on the same kind of seat in the uniform surroundings provided in each bus. They turned at the same intersections, lurched to a halt at the same stops, and the people who rode on her route were generally the same in appearance. She felt comfort at being able to close her eyes and just know that the next stop was hers. As the bus passed a particular piece of graffiti on the left, she would stand, knowing that the bus would be at her stop seven to ten seconds later.

She would graze each rubber-coated step with the bottom of her flat soled shoes on the way down to the concrete of the sidewalk, the tail of her knee length cardigan/jacket/coat (depending on the season) billowing behind her for that half second, and land with a satisfying stomp. Her footwork adapted to more of a skitter than a walk as she approached the stone steps that led up to her Old Penn Quarter apartment, which she shared with her mother, Ananya. Her open palms fell into the push-bar on the front door with the "CLACK" of aluminum forcefully meeting plastic, swinging it open with just the right amount of force to open wide, but just short of the stopper before the wall.

Turn right, stab the mailbox with the key she had waiting in her right hand. Grab all the mail with the left hand, put it under the right arm. Select the other key, look at the gross, burgundy frieze carpet to avoid the hall denizens (especially Fowler, who followed her and asked “what’s in there” repeatedly if she was holding a bag or a box). Stab the doorknob, twist, swing open the door, pass through it and close it, but hold the knob so the noisy latch didn’t snap into the hollow metal strike plate in case mom was sleeping, which she never was. Just in case, though.

Susanka just as quietly pressed the keys into a glass dish instead of dropping or throwing them in. At this moment, as she retrieved the mailbox loot from beneath her arm, her mom, laying in the hospital bed in the living area, would usually greet her with, “How was your day, honey?”

She always turned and stood roughly three paces from the door, near the corner with the coat hook, to review the mail. Even the pensive look she gave each envelope felt like a routine. Each piece of mail reviewed and sorted into two groups: “Review further” in the left hand and “destroy with prejudice” in the right, she would put the left hand contents on the counter and swing around into the kitchen, open the cabinet below the sink and blindly toss the contents of the right hand into the wastebasket.

At that moment, she would answer her mother. Today, it was, “Good, mom! I might have made a friend, and I might have another project at school.” She leaned over the steel bed rails and while clasping her mom in a hug, the hair on the left side of her head would end up on her mother’s face, who brushed it away with a protesting “pfbbbt,” which was funny to Susanka EVERY TIME.

“A friend, eh?” Ananya bounced her eyebrows a few times, as she donned a wry smile. “Is he hot?”

“Mom!” Susanka groaned and lightly facepalmed. “Not a he.” As Ananya wiggled her eyebrows again and opened her mouth to ask, Susanka threw emphatic, splayed fingers toward the floor and stomped once. “Mom! Just a friend!”

Her mom gave her a scolding look. “Well, if you just got yourself a boyfriend, I’d stop asking!”

The daughter started walking away. “Yeah, then you’d just ogle whoever I brought over like a creep!” When her mother erupted in that famously wheezy laugh, she continued, “then we’ll just be back to you telling me to meet someone!”

As the laugh began to taper off, Ananya wiped the tears out of her cheerful eyes and said, “I have such a beautiful daughter.” When Susanka clasped her hands together in front of her chest and frowned in an animated you’re-gonna-make-me-cry way, she added, “So I know you’re going to bring home someone hot!”

“Mom!” The girl disappeared into the hallway, turned into the bathroom and grabbed the brush she’d run through her darkest brown hair. “That reminds me,” She said and paused.

After a long moment, “What?” Her mom knew it was coming.

“I still need to order that privacy curtain. For MY privacy.” More wheezing, boisterous laughter erupted from the living room.

Susanka smiled, but her heart was woeful. She felt grateful that she could bring that kind of laughter into her mother’s daily experience, but they both knew it was a reprieve from the anguish baked into their relationship. Ananya was suffering from a uniquely aggressive onset of muscular dystrophy.

Tying her hair back into a ponytail that wasn’t even long enough to span the width of her hand, Susanka crossed the hall and went into the kitchen, gathering potatoes, carrots, celery, broth and boneless chicken. She quickly skinned the potatoes and carrots, pulled a knife off a magnetic strip on the wall, then carved the veggies. Putting all of it into an auto-cooker and stepping into the hallway, she considered her surroundings.

The apartment was nice for what it was. It was built to be practical and had sleek lines throughout. Due to Susanka’s sense of order, which her mother always catered to, each piece of furniture was carefully chosen, for both its price and its aesthetic compatibility with the apartment itself and the other things in the unit. The gray walls and the interesting ceiling features (which were due mostly to the ductwork throughout the building) demanded more neutral colors, strong geometric shapes and brushed metal accents.

This place was intended to house a small single family, a maximum of 2 young children, as it was only a 2 bedroom, 1 bath unit. The dining area was incorporated into the small kitchen, meaning that everyone was eating at the bar. A television nook was carved out of the area above the kitchen sink, to the left of the fridge, and to the right of the oven/stove. The only window was set into the wall opposite that into which the front door was set.

There was a living area, but that's where Ananya lay nearly bed-ridden for the last six months. It was the only place in the whole apartment that felt spacious, due to the recessed floor giving the occupant an extra foot of ceiling space. Right in the middle of the space was a hospital bed (whose footboard pointed toward the front door) and a cluttered overbed table to Ananya's right. To her left was a set of shelves that were stacked on top of a built-in "coffee table", stocked with meds. Her wheelchair was folded and shoved into a corner of the room, but it was hardly used anymore, due mostly to the hall denizens, as well as the fact that mom was bed-ridden.

Because this apartment had been the house Susanka grew up in, the walls weren't as dingy as those in the hallways and in other apartments that had a higher turnover rate, but no one in this whole building was going to repaint or redo the flooring. No one could afford it.

The auto cooker beeped, announcing that it had reached the temperature it needed to start cooking and was pressurizing the chicken soup. Dinner would be ready in an hour.

Gathering her satchel from where it landed near the front door, Susanka padded back down the hall, ducked into her room and slid the door panel shut. Turning to her only moderately disorganized room, she flopped heavily onto her bed and reached for the slender ivory bag containing her pad. Pulling the slim device from its dedicated pocket and positioning it in front of her, Susanka tapped the notification from Maya and then the "CALL" icon at the upper right corner of the expanded tab, before any nervousness set in.

A couple of tones later, Maya's face filled the screen. "Oh, hey! Susanka!" The girl with the mullet looked down and away from the screen, her face flashing with mild discomfort. "It's, uh, nice that you called!"

Susanka angled her head and locked eyes with Maya's image. "Are you okay? Is this a bad time?"

Something that looked like surprise widened Maya's eyes as she shook her head. "Oh, no no! Timing's great... s'just, don't like askin' for help, you know. Could you, uh... cite your source for what you said in class? No, wait." Maya covered her face with her hand and continued talking into her palm. "Sorry, actually, don't need help, not with classwork. *Shit. Losin' my nerve here.*"

"Take your time, Maya. I will just listen, 'kay?"

Maya got slightly smaller on the screen and the image bounced softly, like the girl leaned her pad on something at the table she was seated at, then pushed both her palms into her

eyes. “Ugh, Susanka. Feel really stupid sayin’ this, but, ‘til t’day, thought I had a chance with you. Was waitin’ for you to ask me out. Then saw how you looked at Dr. Sorenson...”

Susanka caught herself gaping and closed her mouth before Maya’s hands fell away from her face. Adrenaline pressurized her thoughts and she blurted, “I don’t like Dr. Sorenson! I mean, I do, who doesn’t, but he’s the *professor*. He’s cute, everyone thinks so! Right?” She closed her eyes and inhaled sharply through her nostrils. “And he’s a man.” When Maya’s eyebrows knit together in confusion, she continued, “I don’t like men, not like that.”

“Shit, feel really dumb now. Could we., could we code this up as me tellin’ you I like you?”

A tight smile appeared on one side of Susanka’s face. “I thought you were one of Nunya’s girls, and,” her brow furrowed harshly. “I thought you wanted nothing to do with me.”

“Hey, Sooz, you’re a little intimidating, so, felt a bit defensive around you ‘til not too long ago.” Maya paused thoughtfully. “Know what got me wise ‘bout my feelings for you? Saw that I *really* care what you think about me. Was always kinda worried you’d come up one day and unload all your opinions ‘bout me, but that’s not you. It’s me, rollin’ up in my own face.” As she finished, the auto-cooker sounded its shrill alert about the soup being done.

“It’s nice to know that, Maya,” the words came out softly. “Can I sit with this for a couple days? I know what it might feel like to be left without closure, so I promise to bring this up again in 48 hours.”

Maya’s eyes closed as she breathed in the promise. “Gosh. Yeah, that feels good. Thank you. Talk in a couple days, then!”

Chapter 2

The Expo

The bus stopped and kneeled with a hiss at the stop in front of the Ossman-Avilar Building in Downtown Arlington, and, due to her heels, Susanka prowled carefully out of the door as soon as it folded open.

The outfit she wore was inspired by this year's NYC Corporate Division of Fashion Week, while being only a fraction of the cost. Her top was an ivory, sleeveless, backless wool dress that was cut with the hard, geometric seams that one would expect to find on a business suit. It featured an almost cruel-looking, angled standing collar that was high in the back, reducing until it disappeared at the double-breasted, overlapping enclosure, and while the back of the dress touched the back of her knees, the bottom perimeter graduated up as it progressed around, landing high on her thighs. Beneath the dress was a matte black catsuit by Fabri-Mechanica, which consisted of strategically overlapping straps that both hugged the nearly imperceptible curves of her slender body tightly, and moved with her like second skin, while neither bunching nor limiting motion. Her calf-high, heeled boots matched the color and sheen of the dress, while giving her an additional four inches in height. As Susanka entered the building, she noted, with a small degree of satisfaction, that she was no more or less remarkable than almost any other woman there.

Within the stark atmosphere one would typically expect in a conference center, there was a bustling crowd of people weaving through and pausing here and there, within a network of exhibits, each showcasing innovations that bridged the medical field with that of robotics. At the head of the gray, carpeted stairs that descended into the event space, there was a smiling young woman at a hostess station, wearing a nametag that read "Mallory". The Asian woman said kindly, "Look here," while pointing at a glowing green circle on a glossy black panel on the station in front of her. Susanka followed the woman's finger to the circle, and before she knew it, the hostess cheerfully announced, "Ah, Susanka Zaitsev. Your student ID has been verified and your attendance tonight will count for a quarter credit, as long as you visit at least thirteen of the twenty-one stations, stay for at least one presentation at each exhibit, and maintain a blood/alcohol level below the legal standard for unimpaired learning. Remember, you'll need to look at the OcuScan panel at each station you visit to score each objective! Do you have any questions?"

Tilting her head and looking thoughtfully into space for a moment, Susanka nodded and asked, "What happens if I *don't* complete the benchmarks?"

Mallory smiled cordially and said, "An entry fee of 195 credits will be applied to your account, as well as 65 credits per drink. Is there anything else?"

"The drinks are free if I complete all the objectives?"

A happy "mhmm!" sounded from behind the hostess' little smile as she gestured at the opening to the stairs.

As soon as Susanka hit the bottom, she swiped a stout, faceted glass cup that was generously filled with a sunset colored liquid, which had three cubes of ice floating in it, from a passing server girl's tray. Raising it to her dark fuchsia lips, Susanka tasted a delightful medley of pineapple, strawberry, rum, and another flavor she couldn't identify. "*Here's to a few free drinks,*" she said to herself as she found herself at the first station.

Nine exhibits later, Susanka found herself, the tiniest bit tipsy, at one that was labeled "R.E.A.C.T.", which was staffed by a Punjabi guy about Susanka's age. His back facing Susanka, he looked up at a 72 inch screen, and to his side was a beautiful robot, uh, dinosaur? Ostrich? It was bipedal, had a long, prehensile neck, a matching tail, and was covered in an ornately perforated bronze metal skin. For now, the 3 foot-ish robot was swiveling its head in a way that suggested curiosity, seemingly tracking the passersby. Its singular teal eye, much like the green OcuScan light at the station, locked on to Susanka's face, seemingly studying her. Looking at the screen again, she saw herself in monochromatic teal, looking away. Susanka noticed that she was highlighted in a faint white outline, and a rapidly changing field of numbers to the right of the image.

"He likes you!" A thick Indian accent said in front of her.

Susanka noticed that the guy was looking between her and the robot, grinning. She raised one eyebrow in disbelief. "Is that so..."

His face was effortlessly attractive, with his naturally perfect eyebrows that angled sharply at their crests. His dark eyes were shaped like those of a lion's, but were slightly darkened beneath a relaxed bedroom gaze. Was he feeling sleepy? Seductive? Stoned? He had a very short beard, almost short enough, but too groomed to be mere stubble, framing his angular cheeks and his full, but certainly not pouty, lips. He nodded, gesturing at her face with an open hand. "He's taking the time to measure the topography of *your* features. He does the same thing after realizing that he's been in a room more than a couple times."

"You mean, like he's programmed to?" She shrugged and shook her head, smiling at the con.

Jerking his chin at the robot, he said, "I haven't touched his programming for two years. He's autonomous, and he has the ability to overwrite the parts of his base programming that don't suit what he experiences as his personal, thematic functions, *and writes new code that is more relevant in its place.*" As she began to gape in realization, he finished, "I have no idea what he's thinking."

"I never knew that was possible!" Her brows were knit together at the absurdity of what she just heard. "C'mon! That's called *malfunctioning!*"

"Nuh-uh. It's called Autonomous Intelligence. And that is what I bring to the industry. This is REACT: Robotic Exploration And Companionship Technology. This being," he gestured at the miniature mechanical ostrich thing, "is not a computer, and you are not a user in relation to him. If you buy one of these, you're not buying a slave to do your bidding; no, you're enlisting a companion. The point is to learn *together*, side by side, for as long as you want the companionship. Don't want it anymore? Bring him back and I'll give you back what you gave me, adjusted for inflation, and minus a service fee. Until I'm dead, anyways, then you're stuck with him."

Susanka laughed at the last part, and noticed that a crowd of eight others had amassed. "What is it, anyway? A turkey?"

"A turkey!? Nono!" His face contorted as though the word was excruciating in his mouth. As the scowl went away and he leaned confidently on the table, he explained, "He's a raptor, which is a much more effective shape for balance, agility and environmental adaptation. His head and tail are precisely weighted to correct for sudden changes in terrain, shoes on the floor, et cetera."

She tilted her head and nodded approvingly. "Better than a turkey!" Susanka took another sip of her drink and regarded the mechanical raptor. "So, why would I want him as a companion? I mean, why him and not another person?"

His face shifted from amused to solemn in a heartbeat at the question, without breaking their gaze. "Many reasons. Some people don't have other people. Some people need another being that will be inspired by them or get closer to them as they learn more. Plus, consider how satisfying it is to be watching something grow just by living alongside you. Some people would be astonished to find more of their own personality being expressed by something that they considered 'just a machine' before the journey."

While others might find that terrifying, she wanted to say, but as the reasoning landed, Susanka looked around and saw the growing crowd observing the exchange between the two with palpable interest. She turned back to the guy, met his gaze and looked down. "I know what you mean. All of it."

Furrowing his perfect brow pensively, he asked, "What's your name?"

"Susanka."

He nodded and turned to the robot, which noticed the attention and regarded him intently, and he said, "Hey, would you like to accompany Susanka here for a little while?" It nodded enthusiastically and hopped off the table. Some people around were startled at the sudden motion and moved back. He turned to a smaller one on a table under the screen and seemed to nudge it awake. "Could you take over for a little while, Little One?"

As the other one nodded (was that a different personality?), the screen above him flickered and the smaller one's perspective was now being shown. The guy turned back to Susanka with a warm smile. "His name is Carter (which sounded like "KAH-tuh" when he said it). If he wanders off in a direction you're not going in, call him back to you. Or watch him explore! Up to you."

Susanka went to touch Carter's head, and the raptor adeptly brought the top of his head to her palm. He even leaned in with a pleasant level of pressure. Not turning away from the robot, she said, "Thank you, uh," she turned her still craned head toward him. "What is your name?"

"Rajinder. Rajinder Kapoor," his eyes turned friendly and he smiled genuinely, then faced the crowd. "I would be happy to take any of your questions!"

Susanka turned and began to saunter to the next station, but watched her new companion as it looked in the direction she started moving into and then started to walk next to her.

At the end of the night, Susanka had three drinks, saw 19 exhibits, and watched as Carter took in the presentations they attended together. She started to feel drowsy, and decided to call it. When the two reached Rajinder's table, Carter nuzzled her leg with what might have been his cheek as a kind of goodbye, and hopped up onto his table with a truly surprising amount of deftness. The sudden motion caught Rajinder's attention, and he stood to regard Susanka. "How was it? Can you see how robots like Carter can make the world a better place?"

She looked down at the table. "He's amazing. He's going to change lives." After a pause, she continued. "Even if you didn't offer the demo, I wanted you to know that the work you're doing is so important. What you said about your robots, why they make good companions, I realized that... people in my life would benefit from the service you provide."

"Hey," Rajinder leaned closer to Susanka. When she looked up, he continued, "Is everything okay?"

Susanka squeezed her eyes shut to push back the approaching tears. Damned drinks. "Meet me outside when you're done," and she stalked off.

It was a chilly night, and much of the surrounding area had long settled into the rhythms of the District after rush hour. To the side of the building was a ramp that led to underground parking, and a concrete retaining wall lined with a rusty, yellow bannister. Susanka sat on the concrete wall and dangled her feet off the edge, while propping her arms on the bottom of two horizontal rails making up the safety feature. A little while later, Carter appeared at her left side and peered over the edge, then swiveled to look up at her.

Rajinder approached from her right. "Hey, Susanka," he said as though he was metering his cheerfulness. Pointing at the raised concrete ledge on the other side of one of the vertical posts, he asked, "Can I sit here?"

She blinked a few times while looking up at his kind face, offered a curt nod and smiled politely. "Of course." As he climbed in, she said, "My mom. She is who I was thinking about when I was appreciating your innovation."

"Would you say more?"

Another quick nod as she gazed into the avenue, which was lit by traffic signals, headlights, business signs and various windows permeating the tall buildings that lined the roadway. "She has muscular dystrophy. She's bedridden in my home, probably for the rest of her life."

Rajinder turned his whole body to face her, straddling the ledge. "I'm sorry to hear that. Must be so hard to see her like that." Even Carter seemed to get closer to her.

"Thanks. It is hard, and part of it is that she is such a naturally independent person. I think she hates having to rely on me." She turned emphatically toward Rajinder. "She is exactly the kind of person who needs a robot. She would be so happy to regain a sliver of influence over her daily life." As Rajinder smiled softly with understanding, Susanka looked away. "We cannot afford a robot. I'm just happy that there is somebody out there that will have a

better life because of the work that you're doing." Suddenly aware of her statement sounding like a soft form of begging, Susanka began to scramble to her feet and prepared to give the roboticist a curt goodbye.

Rajinder was already standing as she exited the space between the bannister and the ledge. He held out a hand in a careful gesture of reassurance and said, "Can I show you something? Would you come with me to my lab in Ivy City?"

Susanka regarded him, then Carter at her hip. *He's real*, she told herself. *He's dedicated so much time and effort to helping people.* "Yes, I'll go with you."

A little while later, the three ended up in front of a bay door set into the face of a long, concrete building. The Punjabi man squatted and the clamor of his keys sounded as he unlocked and began to lift the gate to reveal the workshop inside. Lights flickered on, obviously automated to do so when the bay door opened. Inside was a spacious converted garage with exposed brick walls and a slightly weathered floor, accentuating its role as an industrial creative space. The build-out of the space was wrought with the combined grit of invention and the raw energy of experimentation. The floorplan was structured into a network of sturdy, makeshift workspaces, showcasing tools and half-finished projects. The walls were lined with aging computers, vintage 3D printers and drafting tables at floor-level, and then, overhead, there were shelves of meticulously labeled boxes for parts and back-burner projects. In the rear of the space was a forge, a vacuum table for casting, and a set of burnishing/polishing wheels. One of the desks near the front was obviously where Rajinder hung out, made calls and mused over the progress of all the varied projects. The place seemed to be an extension of the guy, outfitted precisely to accommodate his unique flow.

He kicked a rolling step stool toward the desired set of overhead shelves and scrambled up the aluminum steps like he'd done it a million times. He came right back down with a dusty plastic bin, and set it on the surface of the workstation front and center in relation to the bay door. Meanwhile, Carter seemed to curl up on a charging station near the hangout desk. "Here," he said as he popped the latches on the sides of the box and pulled off the top.

Susanka peered over the bin's edge, though she couldn't make out what was inside until he reached in and extracted it, setting it on the table. She asked in her slightly Ukrainian accent, "It's like an armature?" As he nodded and looked at her, she continued, "It's a stark contrast to this whole space, like it was meant to belong in a completely different environment."

Rajinder winked and clicked the back of his tongue as he pointed to Susanka. "Exactly. I made it for a laboratory, but it was turned away because it's solely AI-controlled."

"Mmm. Many places like that are still too wary of anything that doesn't incorporate the human element in its functioning. They don't even like surgeons to have augments that directly affect tactile functions," Susanka mused.

Rajinder bunched his lips and cocked them to the side as he placed a hand on the uppermost portion of the assembly. "Learned that the hard way and had to build another version to get the job done."

"Why start over with a new one?"

He nodded almost solemnly. "For me, machines are their own lifeforms. One of my goals from the very beginning was to give machines a level of experiential autonomy. I, I can't just take it apart because it doesn't suit my needs, especially once it's a working model."

Susanka tilted her head to the side in curiosity. "That's very... noble of you. I would have never thought about that. It doesn't make a lot of sense to me—"

"Well, look at Carter," Rajinder interrupted. "He does what he wants, and experiences need and consequences." As Susanka nodded in a 'well, yeah' fashion, he continued. "We feel that way because he looks like an animal, but when you take that away, when he looks like a calculator, does that make him less?"

"I don't know, but I appreciate that you feel that way."

He sighed. "Here. This is Getty. He's a lot stronger than he looks, but he needs to be anchored to something before he can reach his full potential. Once clamped, he can also extend each of the three articulated segments to have an additional 12 feet of reach." Susanka's eyes widened, suddenly putting together what was currently happening. "All you need to do is tell him what you need. It's a bit clunky at first, getting him into a daily routine, but once each object has a name and a function, he'll remember so you don't have to tell him again. And because he's a stationary fellow, he needs to be plugged in, so make sure he's near a power source." Seeing that Susanka mostly understood what he said, he walked over to his desk and grabbed a business card, then put it in her hands. "If you have any questions, please call me. Getty doesn't talk, and I haven't written a manual," a giggle colored his last point.

She shook her head at him and gazed from below her furrowed brow. “You’re giving him to me?”

His reply was long and gravelly. “Well, not exactly.” His face morphed into an almost comical sketch of confidence. “For now, this’ll be the equivalent of giving a pretty girl some flowers!”

She rolled her eyes at him and opened her mouth to retort, but was interrupted when he put his open palms in front of him. “Just give him back when you’re done,” he said with a carefree smile.

“My mom will appreciate this,” Susanka began to say when Rajinder folded the armature into its most compact form and zipped it up in a clear carrying case. “I’m actually kinda dreading what she’ll do with it once she gets a good understanding of him. She was a software engineer before her condition took hold.”

The roboticist shook his head nonchalantly. “No worries. Getty might be pre-REACT, but he’s still running custom code. I assure you that no one will get hurt on the account of this little guy.”

Susanka let him put the cross body sling over her head so that the clear cylindrical bag sat comfortably on her back. The thing was still 25 pounds, but she would be able to make it home just fine. As he adjusted the strap’s tightness, she said with a sad roughness to her voice, “Thank you. I should turn this favor down, but I’ll promise to get your bot back to you when we’re done with it, instead.”

He looked away thoughtfully and said, “There is another favor I’d like to ask in return. Maybe when I’ve concluded the final tests with Carter, you could give me a testimonial when REACT goes to market!”

She grabbed his shoulder and smiled. “Absolutely.” She turned to face the exit of the industrial park gates and looked at Rajinder again. “I’ll give you a call to let you know how things are going, soon,” then she stepped away.

Chapter 3

The Hall Denizens

Susanka tackled the push bar on the front door of her building and the familiar scent of bio, alcohol and urine hit her hard as she entered. To her right was the mailbox panel, and ahead, to the left, were the stairs that led up to the second level. All along the walls, people wrapped in thick jackets or blankets lined the walls. It was almost 2:30 in the morning, so they were mostly asleep.

Homelessness was so rampant that there weren't enough bridges and junk yards to carve out a little place to sleep or weather storms, and corporate security was sparse in residential areas. It was illegal to live in these halls, but that law was never enforced. Even when the off-site land manager came to evict someone or open up a property to a new tenant, they ignored the hall denizens as they would trees and rocks during a hike in the forest. Many of the people in these halls had lived here for a long time, got evicted, sold their stuff and lived off the meager fetch, just outside their old door. Others simply wandered into the apartment building and claimed an available spot along the wall. People died in these halls, and even before their final breath, their belongings were scavenged and distributed to those nearby. A new space along the wall would be all that remained once the body was picked up.

As soon as she hit the top step of the second floor, hot, rank breath brushed her cheek as a raspy voice gurgled "What's in there," repeatedly, as a greasy, balding man without a shirt fondled the bag on Susanka's back. She turned and swatted, hitting the man everyone called Fowler on the hand more solidly than she had meant, but did not apologize. He held his hand gingerly in front of his chest, but trailed the girl down the hall. The question on his lips didn't relent until she pushed the door closed in his face and snapped the bolt shut emphatically.

"Hey, honey," her mom said sleepily in the dark ahead and to the right.

"Hey mom, see you in the morning," Susanka whispered back as she retreated to her room and slid the door panel shut. Feeling for the light panel on her wall, she pushed the shape she knew would give her the softest light setting, then shirked off the sling bag carrying the robot. Placing it in the corner, Susanka climbed out of her dress and hung it back up in her closet. Peeling off the Fabri-Mechanika bodysuit, she noticed that it smelled a little sweaty and chucked it into the laundry in the far corner of her room. Down to her underwear, she

flopped onto her bed and wriggled out of her panties, then reached into a drawer built into the bed's base to retrieve a pair of tiny sleep shorts. Once she had those on, the girl sprawled over her bed and thought about her day. She recalled her conversation with Maya, then her meeting with Rajinder and Carter, and was eventually lulled asleep by the sound of the central air in her otherwise silent room.

Susanka woke the next morning, threw on an oversized t-shirt and collected Getty from the corner. She knew her mom would already be awake and watching TV, so she made no effort at being quiet as she padded a little heavily on her heels over to the recessed living area. "Hey mom," the girl said with a smile.

Ananya was already looking at the clear bag. "What's that? Oh, honey! We can't afford that! Where--"

"Mom!" Susanka said as she put one hand on her mother's shoulder comfortingly. "A friend let me borrow it. He told me it would help you be more independent." Her mom's brow simply furrowed in response as Susanka unpacked it and spun the flywheel recessed into the rubber sole of Getty's foot. A plate that was the exact shape of the foot of the robot detached, and she sandwiched both the upper and lower bars of the bedrail between them, then bolted them back together. She tugged on the retracting power cord, plugged it into the wall and watched.

Getty came alive, writhing this way and that, showing off every possible movement and extension it was capable of, then stood ready. Ananya watched the whole show, then looked back at her daughter, who was smiling wryly. "Okay?" the mother drawled in anticipation.

Susanka snatched a prescription bottle off the shelf on the other side of the bed. "Getty," she invoked. The armature activated and pointed the tip of its closed fingertips toward the girl like a nose. Holding up the bottle, she said, "This is Prednisone, and it is in a standard prescription bottle with a safety feature." Putting it back where she found it, Susanka noticed the fingertips tracking her movements. "Getty, give the Prednisone to my mother, Ananya," Susanka patted her mother on the shoulder.

The robot immediately retrieved the bottle and positioned it over her resting hands. Ananya smiled and gently took the bottle from the armature.

Susanka took the bottle from her mother and put it back on the shelf, then looked at her mom. "I want to see something." Then, "Getty, this time, could you open the bottle and give my mother two tablets?"

Getty's four fingers splayed, and then bent inward like claws instead of the original pliers. The claw descended onto the bottle this time, cleared the white cap and gripped the amber bottle. Then, four stout fingers emerged from the base of the original fingers to grab the cap, and spun on their own axis, twisting the top off. Then, Getty positioned the bottle over Ananya's open palm, reached into the bottle with the left and right fingers and, as one would do with a pair of chop sticks, collected a tablet and dropped it into the waiting palm, then repeated. Those fingers found home again on the sides of the bottle, and the little fingers twisted the cap back onto the bottle's lip. The closed bottle was placed back on the shelf, and Getty returned to his resting position. Both women regarded the robot with overt surprise.

Susanka explained that each item that Getty would interact with would need to be described in the same manner. She gave her mother the business card Rajinder gave her, in case she had any questions. Of course, Susanka knew that her mother would never call Rajinder. That woman's pride knew no bounds. After giving her mother a quick hug, she rose and noticed Fowler staring wide-eyed into the window from the opposing building's roof.

[Susanka went to school and, at some point, asked Maya if the two could spend lunch together the following day.]

Later in the day, with keys in hand and mailbox loot under her arm, Susanka approached the front door of her apartment. Before her hand left her side to put the key in the doorknob, she noticed the door was wide open. The mail she had under her arm fell to the floor as Fowler rushed at her, wide-eyed, armature in hand, and covered in blood. He growled, trying to tackle the girl, but she caught him and fell with him to the floor in the apartment's threshold.

The two landed on their sides with barely a thud on the carpeted concrete floor, half out of the apartment. Susanka frantically tried to wrestle the armature away from the crazed man, and with his surprising strength, he pulled her up and dropped her to the floor. Susanka's teeth rattled as her head rocked back into the thinly carpeted concrete, jarring her senses. When she didn't let go, Fowler descended and straddled her, pinning the girl to the ground with the machine between their bodies. He reared back and opened his mouth abnormally wide, revealing a set of jagged iron jaws she never knew he had. The next moment, he was biting and tearing the flesh away from her right arm, just below the shoulder. The pain was blinding, and the smell of the iron in her blood and the halitosis in Fowler's breath filled her nostrils like a thick vapor as she screamed. She finally let go of the robot and tried to push him off of her. Time itself became jagged as she fought, and the next moment, a neighbor appeared and started beating Fowler across the back with a rod. With a guttural, desperate

growl, the vile man leapt off of her and ran, taking the robot with him. Susanka, overtaken with adrenaline and pain, was heaving ragged breaths into and out of her lungs. The neighbor was in front of her face, asking her if she needed help, but the girl couldn't make sense of the words coming out of his mouth. She tried pushing off of the ground to sit up, but a nauseating agony tore through her as the shredded muscles of her right arm tried to work. The world went black.

Sirens wailed around her, She was bouncing in a rickety bed. A gurney. A face masked in white paper and clear rubber peered into her eyes. The mouth was moving, but there were no words. Darkness.

A hall was racing by, that face was still hovering over her.

Bright lights in a cluster over her. She was covered in blue paper. A mask descended upon her face.

Fog, inside and out. A kind voice was saying something.

Chapter 4

No Arm, No Fowler

Susanka woke in a dark room that daylight fought at the edges of a set of blinds to enter. She made to rub the sleep out of her eyes, but only her left one answered. When she turned to her right, only a bandaged stump remained. Malice rose up like an acid behind her clenched teeth, then burst out of her in a furious roar. She cried and moaned jaggedly as her world turned upside-down and folded in on itself. Bitterness swelled; she couldn't stop looking at her missing limb and feeling the burn of its absence. She desperately wanted to wake up, knowing that this was just a dream, and, oh god, dream? No. That sagging fuck had the robot. Fowler had Getty in his arms. He was already covered in blood. A wave of cold, acidic rage and disbelief raced through her body. "NURSE!" Her yell was a throaty rasp of confusion and fury. She had barely entered her home when he came at her! "NURSE!"

Three people in hospital staff attire rushed into the room and the lights flickered on. The muscles in Susanka's left hand were burning as she gripped the blanket at her side as hard as she could. She could feel the madness in her eyes and the painful twist of the muscles in her face as she demanded, "WHERE IS MY MOTHER!?" The two women and the man all wore the same pained expression on their faces, all of them slowly shaking their heads. A guttural rage rose from within her and bellowed, "NO! NOOO!!" Breath and saliva sputtered out of her as she threw the blanket off of her and jolted up, trying to get past the rails of the bed. Six hands came from all around and intercepted her. Straps appeared and pinned Susanka to the bed. A needle materialized, a single drop forming at its tip. As she fought with will alone, the syringe plunged into the skin of her left arm. The next moment, the void rushed from all around her and consumed her whole.

She woke up in her own bed this time. No one was with her in her room. Her door was open, and the house was dim and quiet. Her senses were dull and her will was gone. Like a thick smoke rushing at a pane of glass, her foggy memories and her numbness collided in her head. The only reason she knew she was alive was the seething she felt deep in her heart.

Susanka woke up the next morning in excruciating pain, and she was starving. Finding herself in the kitchen with a pack of frozen chicken, celery spears, carrots, potatoes and a big knife in her left hand, she began to sob and wail. She couldn't do this. Tossing the chicken and whole potatoes into the auto-cooker, she turned it on, and entered the hall, facing the living area. There was no evidence that her mother was ever here. No bed. No

shelves. No meds. No wheelchair in the corner. There was nothing left of the skirmish with Fowler. No blood. New door.

Throwing herself on the couch in the living area, she couldn't recall how she expected the cushion to feel, and she hated the newness. It was new because all she loved was gone. Her mother, Rajinder's robot. Her career as a surgeon. It was all gone.

Susanka's eyes were pointed at the TV when the auto-cooker beeped. She couldn't remember turning it on. Ugh, she smelled horrible. What day was it?

There was a knock at the door. She was dreaming about a chinese finger trap, and her face was stuck in a scowl as she waited for another knock.

The sickening sensation of jagged iron scraping directly against the bone in her arm made her vomit violently.

Water was pouring into the tub loudly. Finally. All she had to do was get in.

She was pacing in the living area, the TV on in the background. "Chinese finger trap, set on one ring, then there's another below it. It turns, and the finger trap gets smaller." A knock at the door. "Go away," said too lazily to be heard by anyone else in the room, probably. The girl went into her bedroom and slid the door shut.

The auto-cooker beeped. "How am I not out of food yet?" She pushed herself off the floor.

She breached the water of her bath and inhaled deeply as the cool air kissed her exposed skin.

The rows of the gray nylon fabric composing the carpet were biting into her shoulders as she lay in the footprint where her mom's bed used to be. "Mommy..." Her voice was graveled and thin with unuse.

Pacing again. "Each fiber is a spiral that begins in the top ring, and ends in the bottom ring. Because the fibers are woven, they hold each other in place. The structure is rigid because each fiber is a monofilament of carbon."

She shot forward out of the couch to read the screen in disbelief. "Hotwired Hobots: Season 8, Chapter 16?! What is this shit?"

The hot water felt so good. The backs of her ears were crusty and irritated. "I'm too tired to shave, though."

A teal circle of light was in the center of her vision. As she swatted, her hand met with cold, textured metal. Joy sprung up in her and she reached out in a one-armed hug. "Carter! What are you doing here?" Looking around, she was buried in a heap of blankets in a seated position on the couch. The air outside of the blankets was freezing.

Rajinder placed a cup of steaming hot tea in front of her. "Hey, Susanka," he said with a little smile, and plopped onto the section of the couch that faced the front door. Carter sat next to her, as though he was made of warmth.

"I'm sorry, Raj. I lost Getty. I broke my promise," Susanka's voice was ragged. She pulled the blankets over her mouth to hide the quivering of her lips.

His shoulders slumped. "I know, Sooz, but I got Getty back anyways. Even if I didn't, I would never be able to hold you responsible for his loss."

The girl started at that. "You got him back? How?!"

"He can connect to networks. So as soon as he ended up in the hands of someone who was interested in the tech and was turned on, Getty pinged me." Rajinder paused. "Managed to find your attacker, too."

"What happened to him?" The question was darkened with both malice and fear.

Rajinder slouched and looked at her pitifully from under his bushy eyebrows. "Nothing yet. Wanted you to have the first bid at justice. They'd throw him into a hole so deep that he'd never see the light of day. He's no one, and the perfect kind of person the District likes to make an example of; but if he died at someone else's hand, no one would care. He wouldn't even be a statistic."

"Give him to the District. I hate him with all that I am, but I just want to help people. Yes, I really miss my arm, but losing my chance to be a surgeon is the heavier burden, and the thing worth fighting for." Her next movement was nothing short of a lunge as she reached for his shoulder. Her friend's flinch was big, but he did not pull away. "Raj, what do you think about an actual cybernetic limb? Like, building one for me and permanently adding it to my body?"

He was dizzy by the rapid leap from one heavy subject to another. “I don’t think medical science is there yet. Prosthetics are safer, and all but the cheapest models have good AI installed.”

Susanka laughed. “That is *not* how you actually feel. The AI’s are crap, and they are there to guess what motion the patient wants to do. *Your* AI is top shelf, and I don’t even want REACT to guess what I want to do, even if it’s at a 90% accuracy.”

He sighed. “You’re right, the AI’s are shit, but so is how the functional augments are mounted to bone with *allen tensioners* or, god forbid, *screws*. Everything we have either slips off the bone or weakens it so much that a few times leaning on it too hard or accidentally banging it into something always lands the patient in an OR.”

Susanka stood up with excitement on her face and splayed the fingers of her left hand to build that energy further. “I think I figured out how to solve that problem!”

Later that day, the two were bent over opposite sides of a workstation poised to be in front of the 3D printers in his shop, drawing the thing that evolved in Susanka’s mind of its own accord these last six months. It was a woven monofilament carbon mesh sleeve that would tighten by turning the ratcheting spool between two cylindrical rings. Rajinder added a flat knob with a sawtooth channel near the base of the other side of the assembly, so that the augment attached to it would never slip.

“This is a solid idea, Sooz, and it scares me.” Rajinder paused. “I think it’ll work. I think it will change everything.”

Her eyes sparkled as she smiled confidently. “It will give me a second shot at my career; that’s for certain!”

He drifted back to the drawing, fully passing by the opportunity to meet with her excitement. Mumbling to himself, he grabbed a transparent film and started drawing on it with a dry-erase marker.

As the idea started to take form, Susanka tightened her mouth to one side of her face. “There’s more. It needs to be as natural-looking as possible. I also need to be able to wear gloves and wash my hands with water.”

Rajinder looked up at her for a moment, like the image was on her face, then wiped the film clean and started again.

Chapter 5

After a couple of weeks, Rajinder and Susanka had gone through a number of iterations and ended up with a lot more questions than solutions. His focus was on tactile sense and relay, while hers was the ability to perform the range of intricate gestures needed for surgical competency.

Rajinder palpated at Susanka's right bicep, fingers prodding and rubbing at every inch, right to its rounded end, as though he were trying to memorize the muscles and bones that were still there. "I think the best thing to do is rebuild the arm to the elbow. We need to economize on what's here: this bone, these muscles," he said while pinching them, respectively. "The muscles can drive the forearm position, like it normally would, but we need to replace the length of muscle that was taken."

Susanka was only half listening, while her awareness was more on the relief his touch was giving her. The new end to her arm was still so sore, and her nerves there were still not giving her accurate information. To this day, her body still tried to use the arm, and even reported the excruciating feeling of her arm being hopelessly caught within a gnarled mass of concrete and rebar. In an attempt to wrestle her senses back from that nauseating sensation, she concentrated on his touch and said, "What are you going to do with the nerves?"

His touch shifted at the question, from prodding with his fingertips to compressing with his calloused palms and interlaced fingers. "There are synthetic nerves on the market, but they're meant to return the sense of touch to areas that are local to nerve damage, like that in burned flesh, as opposed to reporting sensations along non-organic prosthetic limbs. I really do think a co-processor will be required to translate both the sense of touch and the neurological commands that are responsible for all the motion that happens below the elbow."

The Ukrainian woman furrowed her brows in a sneer. "How many times do I have to say that I don't want AI involved in my motor functions, Raj?! That will disqualify me from performing surgery!"

His shrug and plaintive expression did well enough to convey the lack of options beyond the presence of a chip set in the new arm, but he chose to reassure her. "Look, your nerves will provide the input data that will drive the system. I promise that we'll do our best to avoid using anything predictive. I know that's where you draw the line, Sooz."

She only looked down into her lap and nodded shallowly.

Using that information, they were able to begin making measurable progress in their work over the next couple of weeks. Rajinder was able to build the base of Susanka's cybernetic limb, which included: the structural framework that made up the remaining length to her elbow, the extended synthetic musculature to drive the mechanical joint, the nerve socket (to drive brain-informed motion in the forearm and hand, a rechargeable power supply, and a drive with the REACT-OS running parallel to the nerve harness to lightly inform precise motor functions. When the roboticist wasn't building, Susanka was going over the surgery with him, step by step, from the first incision to the last suture.

It was surgery day. Both of them were nervous, but after Rajinder had a couple of drinks and Susanka's arm was anesthetized, they were ready to go. The roboticist was in a sterile jacket and gloves that went halfway up his forearms, surrounded by his surgical implements: the knife, hemostats, an electrode for cauterizing, gauze, the bone sleeve, the nerve mesh, the strands of synthetic muscle, and finally, the root assembly. Susanka nodded at her arm, which was freshly cleaned with betadine, tied with a tourniquet, and placed in their little clean zone, "Make the first cut."

Susanka guided him through managing the bleeding with the hemostats and electrodes while sorting through the tissues they were going to work with. Once the area was prepared, Rajinder slid the mesh bone sleeve into place and ratcheted it into place with an allen wrench. After giving it some really good pulls, the two smiled stupidly at each other, both knowing that they had the foundation they needed for it to be a successful augmentation. For good measure, they applied a coat of bone gel over the sleeve.

Next was the grafting of the synth muscles. Rajinder peeled cellophane from paper, removed two fluted, black tubes and slipped the wide mouth of the first one over the ravaged end of what remained of Susanka's bicep. He then gripped the base of the flute where it met the muscle, and pulled on the stem. The flute tightened and conformed around the muscle tissue, then the roboticist tacked the three tabs on the top lip of the mesh to the muscle tissue with the electrode. He did the same with the tricep, then sprayed them both with a sealant.

Then, the nerve mesh, a network of conductive monofilament in the shape of a ring, was applied to the epidermal layer. The bottom edge of the ring was already insulated before the surgery, and the HD 72 prong socket was strategically situated above what would eventually become Susanka's elbow.

A preformed synth-flesh “cap” was fitted around the newly modified base of her arm, which would allow the ends of the synth muscle and the adapter at the end of the bone sleeve to stick out of it without having an open wound to keep from getting infected.

From there, Rajinder simply had to plug the socket into the nerve harness, slip the root structure onto the adapter, lock it into place with a special key he’d made for this specific function, and route the tips of the synth muscle into the titanium elbow hinge. Once he got the tension he needed, Rajinder crimped them into place with titanium cuffs and soldered them shut.

To further seal the cybernetic interface from infection, as well as to provide dermal support, Susanka insisted on an acid-applied synthweave sleeve that housed the line of biological termination and the root of the augment. At the end of the procedure, there was a point at which the flesh of her arm ended, and only midnight blue metal followed.

The tourniquet came off and a couple of beers were cracked open in celebration an hour and fifteen minutes after the first cut was made.

The rest of the cybernetic arm would lock into place, using a unique tool that Rajinder would keep.

Frustration occasionally crept in, but their shared determination fueled their perseverance. After multiple iterations of the forearm and hand, they encountered their next breakthrough: NerveMesh. By lining the artificial muscles with a mesh that would inform the functions of relaxation and contraction, the movements the arm was capable of surpassed the impossible standard set by Susanka’s natural arm. It was also a way to inform a rudimentary touch sense along the synthweave that would serve as the skin on her forearm and hand.

From that point, Rajinder was entirely in his element. Once he meticulously scanned Susanka’s left forearm, he had everything he needed to make the rest of her right arm. After only two weeks, he had a prototype and was able to demonstrate its full range of motion using his computer. There would be no more surgeries; the roboticist just bolted the new forearm to the elbow hinge, connected the nerve harness and applied the housing.

Even though the limb was not yet powered on, Susanka was both crying and laughing at her excitement about the brand new arm stretched out on the table before her. “Thank you, thank you, thank you,” she sobbed to the Punjabi man seated across the table from her. “Please, my friend, do the honors.”

His expression was a celebration of hard work, a job well done, and a reflection of his friend's near primal elation as he leaned over the table and thumbed the slider on her inner wrist into the 'on' position.

One moment, Susanka's face was happiness covered in tears. The next, it was the visage of horrible anguish, eyes wide, eyebrows sharply knit, lips peeled back, teeth clenched, as her arm sprang toward her chest, hand bent sharply down, and her fingers contorted into gnarled claws. Her voice was a guttural median between groan and growl as she protested the sudden, searing pain.

Rajinder scrambled desperately across the table and fumbled with the hyper contracted arm, trying to reach the switch. When his fingers finally found it and clicked it back into the 'off' position, Susanka's physical pain also curbed sharply to zero in the weirdest, most disorienting way. As her ragged breathing calmed, she said breathlessly, "It was like... he was chewing... on my bones again... Oh my god... Oh my god..."

Holding the now limp arm gingerly in his own hands, his brows furrowed in concern, he said, "I'm going to check it for problems, and I'm going to see if there's a way to check the signals your brain is sending down the nerve harness. I have some ideas." As he started turning his precision wrench, he softly continued, "I shouldn't have started off with the cybernetic arm first. I was too hasty." He glanced up at her from under his thick brows. "I'm sorry, Sooz."

Susanka grasped his shoulder with her left hand and looked at him wearily. "Neither of us could have known that would happen. No one's ever done this before."

The next day, Rajinder guided Susanka over to a chair at his office desk, saying, "I came up with a diagnostic tool. We're going to check each of the 72 points of connection to the nerve mesh and measure the signal strength. You won't feel a thing." When she nodded at him to proceed, he connected a cord to the nerve harness socket. Right away, his mouth dropped open. "All of your nerves are firing with everything they have." He slumped into his noisy office chair and gestured at her. "You need physiological therapy."

Susanka looked slightly away and nodded. "That makes sense, due to the trauma those nerves endured. I wonder if it's like my phantom limb syndrome was suddenly validated after these last seven months. I wonder if there's a way to slowly acquiesce myself to the synthetic limb."

Rajinder looked off to the side thoughtfully and pointed at the air there. "Yes, I remember that they use a mirror to trick people with missing arms and legs to trick their nerves to

relax. What if we just gave the arm some simple commands and had them run on their own, while slowly turning up the volume of your tactile senses?”

She was looking at him this time, nodding confidently. “Yes. I think that might work. Let’s try it.”

So, he wrote a simple program that would automatically turn her wrist clockwise and counter-clockwise, and open/close her hand, and, into earbuds that Susanka would wear, announce the motion as a suggestion to do that motion, like, “Try turning your wrist clockwise. Open your hand. Close your hand.” and so-on. Meanwhile the REACT co-processor would slowly ramp the tactile sensation of these motions from mute to full sensitivity over the course of a week. Sessions would be 15 minutes every four hours, three times a day.

The downside was that they had to keep the arm on and functioning for it to work. The upside was that painkillers weren’t too much of a dampener for REACT-OS to work. So, Susanka was put to bed for a week on an IV and painkillers while the AI did its thing.

On day three, Raj sauntered up to the bed. “Hey Sooz, we’re getting low on stuff. Gonna run to the store. Do you need anything before I go?” Even Carter was getting ready for the jaunt by wiggling a strap connected to a little wagon over his neck.

Susanka pointed to the center workstation nearest to the garage door, upon which her satchel was resting. “Could you give me my bag before you go?” With the wagon in tow, Carter stalked under her pointing hand and stole a quick nuzzle against her wrist as he passed. The selfish touch on the part of the lithe metal raptor filled Susanka with a warm inner “Squeee”, which surfaced upon her face in a wide, toothy smile.

As Rajinder handed her the bag, he paused, entirely focused on her jubilant expression, drinking it in for two slow heartbeats. The look on his face was that of someone who’d heard a joke, knew it was a joke, and smiled at the fact that it was a joke, but wholly without the personal experience of the punchline making a solid landing.

So Susanka vegged in bed for a few more days, watching shows, listening to music, petting Carter, shooting the shit with Rajinder while he worked, and doing the therapy. Every night, Raj disconnected the arm at her elbow so that she could roll over in her sleep as her body needed. At the end of the week, the roboticist muted the sensory system of the limb and powered it on. While watching Susanka’s face for any expression of pain, he ramped up the sensory capacity to full. “Close your hand?” When she did, he continued, “Open your hand? Palm down? Palm up? Wrist down? Wrist up?”

Every time, Susanka did as was suggested. "It feels good."

"Okay," Raj started, "try doing something you haven't done with that hand yet." When she looked at him dumbly, he snickered, rose from the stool he was sitting on next to the bed, and went to the mini-fridge next to his desk. Coming back with a can of beer, he said, "open this."

"I like this test," Susanka said as she held the beer with her cybernetic hand and popped the tab with her left hand. As soon as the pressure left the can, it crumpled, shooting a thick spout of beer into the air that splashed down on the now squealing woman. Rajinder lost his shit, pointing and snorting, unable to breathe under the intensity of his laughter. Now soaked, Susanka sneered at the Punjabi guy until he forced himself to stop laughing.

She climbed out of bed by scooting to the end without incident, but when she started stripping the bed, the sheets tore. Rajinder took to the task of getting the mattress outside so it could dry, and put the sheets in the dumpster next to the building. After taking a break to shower, Susanka tried other things, like tying knots, writing, using scissors, holding cups and anything else that wouldn't accidentally cause either of them harm. Raj didn't laugh at her again. While the arm wasn't completely useless, it was a far cry from being able to perform surgery.

After almost three days of very slowly decreasing epic fails doing simple tasks, Susanka found herself demoralized. It was hard for her to take the win of having an arm because it felt truly alien to her. Late that second day, Rajinder was printing a synth-flesh sleeve that would go over her forearm and hand when he raised a little nylon spatula into the air to denote a moment of inspiration. "You know, we could run another set of programs through your co-processor to teach your brain what fine motor skills feel like."

In line with her two and a half days of solid stewing in failure, Susanka bit out, "Like what? I destroy everything I touch."

He turned toward her with his eyebrows pinched together in concern, "C'mon, hear me out. We could do practical things like writing and typing, but let's have some fun with this! I'm thinking coin-twirling, cardistry, origami..."

Susanka raised an eyebrow. "One-handed?"

He smiled genuinely, crooning, "Sure! Might be fun at parties!" Seeing the layer of frost giving way on his friend's face, "How about braiding? Engraving? Calligraphy?"

Throwing up her hands, the Ukrainian said in lightening exasperation, “What else am I going to do?”

He laughed, “Not stay in bed the entire time!” With that, he rolled his chair over to his desk and got to work on the dexterity training simulations.

After another week, they again stopped running the programs and gave control back to Susanka. After spending all day trying myriad tasks, she finally expressed, “The upside is that I was always curious how they did calligraphy! It took me a week of watching my hand do it, but look, I can do it on my own now!” She produced her name with ink on paper with nothing short of a flourish.

His face said everything about how tired he was, but he smiled with as much enthusiasm as he was capable of at the moment. “It is truly remarkable, Sooz. What happened to your arm is absolutely tragic, but this is a truly unique opportunity for my own studies into robotics. I never thought that the machine and human relationship would build on itself like this when I first set out to build robotic companions.”

Susanka tilted her head to the side and smiled warmly. “I’m glad that this isn’t just charity work for you. It helps me to know that you’re getting something out of this, too. I see how exhausted you are.”

The roboticist’s face softened. “It’s so much more than an act of kindness! Yes, I love making robots, but this feels like the next level in my journey.” He watched as she instinctively used their creation to move her hair off of her cheek to behind her ear. “Do you realize what you just did?”

Her eyes widened for a moment and she regarded the midnight-blue metal appendage in surprise. “No. I didn’t even think about it.”

Pride bloomed over his whole countenance. “That right there is the moment I wanted to see in the relationship between REACT and its human counterpart. Something so natural, and yet, simultaneously impossible without the two working in harmony.”

“You mean, like driving a car?”

He lazily facepalmed. “No.” Rajinder exhaled thoughtfully. “Sure, a car and a driver work cooperatively, but the car’s goals are different than the driver’s. The car operates its parts and measures the efficiency of its work in that way, but the car doesn’t have any sense of

investment toward the driver's destination.” He pointed at her arm, which she was studying. “The REACT operating from your arm's co-processor is learning how you would use your own arm and simultaneously facilitating the nervous signals it receives from your brain and muscular functions of those desired motions.”

Nodding shallowly, Susanka started to understand what her friend was getting at. Using the analogy to relate to her experience with the cybernetic arm, she considered that self-driving taxis were very much a thing, and that's what prosthetics amounted to. That lacking cooperation toward the desired effect of every motion was what she wanted to avoid. She could further see how the medical industry would want to avoid that kind of relationship in a surgical environment.

Chapter 6

Not Life As Usual

She would attempt to resume her life by visiting Mr. Sorenson at the medical college, but found that would not be possible. There were strict policies that allowed only autonomous robots or natural human hands to perform surgical procedures, as technology at the grade she was presently sporting was unknown, and certainly not tested. After almost eight months, Susanka boarded a District bus and made her way back to school. With Rajinder's workshop being her new routine, she was seeing the journey with new eyes. All the people with whom she rode that bus, the graffiti on the walls outside, the school itself, everything. Arriving at the Hanson Institute an hour before classes started, Susanka went straight to Professor Sorenson's classroom and found the man at his desk in the far corner, with a tablet inclined in front of him. As she entered the room, he looked up and immediately rose to his feet. "Ms. Zaitsev!" He took two tentative steps toward her. "I heard wha-" his brows knit in deep concern. "I'm... sorry for your loss."

Susanka looked at the floor. "Thank you, professor."

When her gaze rose back to Mr. Sorenson, he was looking her over. "I'd also heard," he started to say as he gestured at her hands. Obviously confused, he muttered as his gaze wandered across her body, "...about your arm." The statement was saturated with questioning.

Cradling her right wrist in her left hand in front of her, she said, "It's true, but I need your guidance. I really want to continue the surgical course."

"Susanka," he began in a tone rich with finality. "You know that you can't be a surgical tech with a prosthetic limb. You're among my star students, but..."

"It's not a prosthetic," Susanka interrupted. "It's cybernetic."

The professor's eyes widened in utter disbelief. "Truly? Can I see?" As he asked the question, he walked quickly to the classroom door and closed the window panel. As he walked back toward Susanka, he held inviting hands in front of him. Once she placed her cybernetic arm in his gentle grasp, he slowly nodded his head. "It looks natural, from a distance, but the weight and the texture are telling. How is your dexterity? How is it connected?"

In response, his student took her arm back and grabbed the stylus on the tray beneath the curved presentation screen. She drew the bone sleeve and a quick sketch of the synthetic elements that attached her organic arm to the cybernetic limb attached to it. He watched and lightly pinched at the stubble on his chin. "This is more sophisticated than anything they're doing in prosthetics right now. How'd you work this out?"

Susanka shrugged. "I dreamed about it and my friend and I built it."

Then he shook his head. "Did you just draw that with your artificial limb?" When she nodded, he gaped and gestured to see her arm again. "Is there any way I could see what's under here?"

Before he took hold of her arm again, she took off her cardigan shirt and reached back with her left hand to the back of her right arm. She found a hidden tab and pulled on it, rolling the synth flesh away from the midnight blue metal underneath it. As more was revealed, the professor ripped away his glasses and his eyes could not have been wider. When her mechanical wrist was almost exposed, she loosened the fingers of the synth flesh glove and pulled the tips to reveal the delicate robotic fingers. Laying the synth flesh covering on her backpack, she offered her cybernetic arm to the mind-blown professor.

When he lightly stroked one of the smooth surfaces, she jerked a little, due to the tickle response that his touch sent up her arm. At that, he dropped her arm and backed away. "You felt that?!"

Instinctively, she hid her arm behind her, nodding. "Yes."

"Ms. Zaitsev, this technology is *miraculous*." He pointed at the synth sleeve. "No one else can know about this. I'll try to dispel the rumors that you lost your arm and get you back in class. Just continue being the genius you are and we'll get you caught up in your studies." Anxiety started showing in his demeanor as he began to pace nervously. "Also, please collect peer coaching hours and join whatever programs you can handle. We need as much attention on your performance as possible. No one can have time to suspect that you're not fully... intact. Officially, we never had this conversation. I believe in you, but I won't lose my position if this comes to light."

"Fine," Susanka nearly had the sleeve on. "I can agree to that." With the synth flesh back in place, she went on. "Mr. Sorenson, I want to be a surgeon more than anything. I owe it to my mom and to myself to succeed. No other option is good enough." *She would have died for nothing*, Susanka thought. *I would have lost my arm, and all this work would have been for nothing.*

(Susanka continues with her studies for a couple of months, during which time, she begins a relationship with Maya, becomes more acquainted with Nunya and his girls, and involves Rajinder in her friend group. After a time, Dr. Sorenson is found dead and strange people start poking around. A head of the surgical services program at Hanson expels her for trying to hide the fact that she has a “prosthetic arm”. On the way home, she hears a familiar voice and runs into Fowler, beating him within an inch of his life and ripping out his iron jaws.)

Develop relationship with Maya for a betrayal later.

While her initial dreams were crushed, Susanka realized that she and Rajinder could accomplish for others what the two had done for her own arm. Leveraging their combined network of contacts within the medical and technological communities, they reach out to colleagues, former classmates, and industry connections to spread the word of their innovations.

Part II: On Our Own

Eventually, special cases are referred to people who are willing to accept experimental treatments for their conditions, especially by referrals who want to participate in studies about the technology without taking any official risks. After their patients come back with overwhelmingly positive feedback, more patients are funneled to the duo.

Not long after just a few completed operations, Susanka and Rajinder are encountered (or ambushed) by Martin Kane, COO of Labor Enhance Dynamics. He had hired Susanka’s second patient, who was performing well beyond the standards set by the corporation. Leveraging his considerable wealth of contacts in the medical field, he threatened Susanka and Rajinder with accusations that could more than swiftly end both of their careers, then offered a contract that incentivized the acceptance of jobs from LED for a sponsorship that would allow them to operate without fear of the medical industry’s wrathful attempts to label what the two were doing as malpractice.

Two years, 128 successful operations, and a substantial threat of a life spent in prison later, Susanka and Rajinder stood in front of a warehouse in NoMa II, (colloquially referred to as “North of Mankind” Ave) with the realtor, who is talking about all of the obvious details of the building in a colorful monologue, and seemed very impressed with himself as he did so. Even before this meeting, the two decided on the name “Sensitech” as the company name, which emphasized the sensory capability of their products as viable substitutes for natural limbs. With several contracts spanning the duration of the next five years in place, they were confident that the services would be more than enough to cover the projected

operating costs and pay up to five more specialists, while still being able to put away a meaningful sum for advancements they were hoping to make in 10 years.

A conflict with the rising wave of cases of something the media coined “Cyberpsychosis” comes to a head when one of the patients referred by LED comes back to the Sensitech building to kill Susanka.