

about 3,850 words

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## The Subway Algorithm is Half-Constructed

By Marie Vibbert

I met Kato my first day in the lab. He held out a hand that could build things; it felt like an axe handle in my grip. He asked, “You’re here for the machine learning project?”

I fought the urge to turn my hand palm-down as a subtle hint I’d gladly be his if he liked men. “Part-time. Drushel’s my thesis advisor.”

Kato slouched catlike against a counter full of monitors. He looked comfortable in his skin. “Me, too. What’s your topic?”

I’d spent months answering this question, and each time I had no idea what to say. “Subways. Imagine you could map out every power line, every plumbing line, and weight where people most want to go, where there is room for stations, where the roads are, and you can find, like, the absolute cheapest solution.”

Kato blinked slowly. “You’d still get blocked by city hall.”

Exactly what people kept telling me. I hated that. Also, the indifference in his gaze was rapidly destroying my hopes that he only *looked* straight. “Well, maybe. But maybe not. If you could get it under a budget bar? If you have proof, mathematical proof that this is the best way to move people?”

“Some private kickback would ensure the money went to, I dunno, coal-powered buses.” He walked along the computers, checking their names on the little cards. “We got new

computers. Enterprise. Discovery. Botany Bay. Doc's a Trekkie. Last year they were Kirk, Picard, and Janeway."

I was angry. I was hot. I wanted his eyes on me. "Well, fine then, what's your thesis?"

He picked at a computer's name tag and looked embarrassed. "Novels." I had nothing to say to that. He faced me. "I'm getting a joint MS/MFA. I'm writing a novel-writing AI. It's a group of AIs, actually. Like a writers' group. They'll judge each other's work and correct."

"Will they form friendships and fall out over bad reviews?"

He sagged in relief, a smile breaking hard on his features. "Exactly." I soaked in the warmth of his pleasure. I almost never say the right thing.

"So, you met Kato?"

Dr. Drushel was in the corridor outside the lab, like he'd been waiting for me.

Kato, of course, had left hours ago.

It's not like I didn't know I'd have to talk to my advisor. I had just hoped I wouldn't. Dr. Drushel followed me as I retreated back into the lab. "Didn't hit it off?"

"He was, uh, nice." Was I going to be evaluated on how well we got along?

Dr. Drushel folded his arms. He looked like the father in a sitcom about to explain the birds and bees. He had a United Federation of Planets logo embroidered over his lab coat's breast pocket. "You know, a lot of computer science graduate students suffer from social anxiety." I was definitely being evaluated on how well I got along with others. I struggled to come up with something socially mature to say, but Dr. Drushel, probably because he was emotionally mature, broke the awkward silence with a wave of one hand. "It's a topic. I even

have a project with a colleague in Behavioral Science. A social anxiety chatbot. It's culturally specific to the Midwest, but the basic premise could be implemented anywhere."

Talking about computers instead of emotions made me able to mimic the pose of a grad student without social anxiety. "That's, um, interesting."

"We're always looking for volunteers."

I was misreading this. He wasn't trying to psychoanalyze me; he wanted free labor. I relaxed. "Oh, um . . . I think I'll be too busy with my project?"

He nodded and uncrossed his arms, and I thought that would be it, but before he left, he put his hand on my shoulder. "Keep an eye on Kato. Don't be afraid to tell me anything."

He left me in the wake of that warning.

I used Dr. Drushel's tools to build three AIs who would correct and comment on each other's decisions. Carter was progressive and my secret favorite. Curmudgeon was designed to be a perfectionist. Very little would be good enough for him. Cook was the randomizer, constantly seeding difference into the mix. I started them on a simplified problem, a toy of a map I drew myself. A straight line would solve the subway problem on this map. The AIs had yet to realize that, drawing subways that skirted the perimeter or dug right through buildings.

Kato dropped into the chair next to me. His hair was disheveled under his hoodie. "I am so hung over." He peered at my screen. "Anything I can steal?"

I wanted to tell him I'd been inspired by his group idea. Flatter him. I was also bristling with that not-so-veiled warning Dr. Drushel had given me. Was Kato dangerous? Was that, somehow, sexier? "Cook thinks we can teleport," I said, hoping for a joke. Kato continued to

stare red-eyed at my screen. I hadn't told him the names of my AIs. I cleared my throat. "How's the writers' group?"

"I named them Hemmingway, Atwood, and Tiptree. It's awesome. They hate each other."

"AIs don't hate. They make decisions based on—"

"Dude. I'm not twelve. I mean I turned up their negative correlation responses."

If I had a subway-building machine, I would use it then and there to sink myself to the center of the Earth.

Kato lurched to his feet. "Fuck it. I need a nap." As he left, he muttered, "I thought you'd be fun, man."

It's an understatement to say I'm not good with people. I telecommuted my undergraduate degree from my childhood bedroom by choice. While other guys in my feed complained about fathers not letting them date, my dad was desperate for me to meet someone. He joined a "fathers of gay sons" group and kept trying to fix me up with some other guy's kid.

Kato should have been a low-difficulty shot at socialization: a guy interested in what I was interested in. Alone in the lab. I blew it.

So, there I was, two weeks into the semester, standing terrified against the back wall of the LGBTQ+ student mixer. I had a paper cup of too-sweet fruit punch and a fiery knot of anxiety in my gut. Almost everyone there was an undergraduate, two to four years younger and cooler.

A girl with a butch haircut came up to me. "Come play Scattergories, new guy!"

I crushed my cup and red liquid gushed all over my hand. The girl jumped backward. People rushed over with napkins. A gaggle of voices, of solicitous hands. I ran.

The doors to the student center slapped behind me, cutting off a dozen shouts. I kept running into the quad. I ran directly into Kato, or more accurately, into the pizza box he'd been carrying. I tried to stop myself from falling right on him and fell flat on my ass.

"Easy." Kato set the pizza box on a park bench and helped me to my feet. "You're hurt." He felt my stomach, my chest. It took me a moment to stop thanking my lucky stars and realize why.

"Oh. No. That's fruit punch. What are you doing here?"

He held a hand up to his nose and sniffed, then licked. His concern melted into a chuckle. "I live here. What were you running from? Werewolves?"

Helpless, I pointed at the large windows to the rec room. Kato peered in and then back at me with exaggerated dismay. "Board games and fruit punch? You're lucky you made it out alive."

I sat on a soggy park bench and covered my face with my hands.

Kato sat next to me. He put his large, rough hand on my back.

That was all. He didn't say anything. Eventually, I could speak. "I knew I was gay from the second grade, but I had a girlfriend for half of high school because I didn't know how to tell her I wasn't interested."

"I don't think that'll be a problem at a Rainbow Alliance party. They're going to pretty much assume you're gay."

"I still have to talk to them. Everyone knows you go to these parties to meet someone. They know I'm desperate and alone."

Kato's hand moved in warm, slow circles. "Does everyone in there look desperate and alone to you? They're hanging out, making friends."

I didn't want friends. Or maybe I did. I didn't know. "It's like you have to do all this . . . social hoop-jumping, and you don't even know if you're going to want to kiss them?" I felt heat on my ears and knew I was blushing. Did Kato know he was a person I wanted to kiss?

Kato stood up. He pointed into the rec room. "See that guy? In the red sweater? Talking to the kinda punk guy?"

"Why?"

"He might be your type. I dunno. But we used to date, and I could introduce you." Kato made a theatrical gesture, like he'd pulled a boyfriend out of a hat. "See? Friends can be real handy."

Half my brain was flashing like a neon sign HE DATES BOYS but then he was leading me back toward the party and I wanted to shrivel up into the smallest possible size. "Please don't."

Kato sighed and picked up his pizza. "Or you can come back to my room and help me eat this. How's that sound?"

It sounded like rescue.

The pizza was veggie supreme, not something I'd normally order, but I pretended to love it while Kato showed me his first tests with the writing group AIs. "I couldn't figure out how to get them to start, so I seeded them with old short story drafts of mine." He pulled out some printed pages and frowned at them. "I like some of what Atwood had to say about it."

"If only I could train an AI to make friends for me," I said.

He snorted. “Don’t even joke about that. Dr. Drushel lost a grad student because she wrote a catfish bot.”

“Huh?”

He nodded like I wasn’t asking what “catfish” meant. “Turns out, getting unsuspecting dudes to train your AI to flirt violates human subjects’ protocol. It was the ‘unsuspecting’ part.”

An AI to flirt for you? It’s unethical to do that? I was still weighing these facts when Kato added, “I’m thinking of writing a book about the personalities behind machine learning projects. There’s gold in these grad students.”

“Please don’t write about me!” I blurted.

Kato rolled his eyes. “Don’t worry. I won’t. And my AIs can’t.” He handed me some sheets of machine-generated fiction.

*Dear, do you remember when horticult slang gutter dandelions when the awful bright tea light streaming came to a silk fissure? Oh, daffodils, I am sure of it.*

I cleared my throat. “It’s . . . uh . . .”

Kato took the sheet. “It’s a first draft.”

Kato never exhibited any maniacal or evil tendencies, though Dr. Drushel continued to ask me pointed questions like, “Has Kato ever made you uncomfortable?”

Only in the horniest sense, I didn’t say.

Kato helped me move into an apartment at the end of term. He leaned on top of a box of books and looked up at me with perfect incredulity. Or maybe it was the three flights of fire escape above me.

“Only five floors up? You couldn’t get the penthouse?”

The building was six floors high.

Once the boxes were all piled up in my new room, we sat among them, eating greasy cheesesteaks from the place on the first floor of the building. “I have never felt so bohemian,” I said, surveying the walls, thick with complex plaster, sagging with age. The narrow windows had wooden cornices like cake frosting.

“I’m beginning to think all your AI research was a cover story to get me to move boxes. Or does it teach you how to **make** strong friends with free weekends?” Kato shook cheese strings from his fingers.

Commented [LR(S1)]: Avoids repetition of “get” – OK?

I sprawled on the floor because sitting made my stomach look fatter. “That’s a better thesis idea.”

He gave me a look that invited questions I was afraid to ask. He sucked on his forefinger. “Better to train an AI to write your thesis for you.”

“That’s the only thing that would be more work than writing the thesis itself.” Which was one reason to **try** it. “How’s your MFA group doing?”

Commented [LR(S2)]: Avoids repetition of “do ... doing” – OK?

“Let’s always be best friends.” He startled me **with** the suddenness of the words, and with his hand on mine, still damp **with** grease and cheese and saliva from those perfect lips.

Commented [LR(S3)]: Repetition of “with” x4 OK here or reword to avoid? There’s a nice echo between the first two, but the others take away from that, I think.

This was it, my chance to confess my feelings. “Kato . . . I . . . I just . . .”

He held up a hand to stop me, and I was grateful to stop. “Let me get this out. Before I met you, I was stuck a long time in a bad relationship—not the guy from the mixer. Then I had a few fast, shallow relationships and . . . I’m not dating, okay? No one.” There was an apology in the way he paused and looked **off to one side**. He knew. He was letting me down easy. I shifted away from him, a hand on my stomach.

Commented [LR(S4)]: Avoids repetition of “away” – OK?



He tightened his grip and looked me in the eyes. “But I want to be sure we keep this. This lab, this new program, I want it to be a new me. With friends. Be my best friend?”

I squeezed his hand back, ashamed to be almost grateful.

I was glad I had a friend. Glad I’d matured to the point where I could have a sexy guy as a platonic friend. I composed a congratulatory newsletter for my parents and my ex, and never sent it.

I was so mature and respectable, I went looking for the catfish bot. I wasn’t going to use it. Probably. I wondered if Kato had been in on it, if that was why Dr. Drushel warned me about him. Why the long string of “shallow relationships”?

All the work was in Dr. Drushel’s archives. He never threw anything away. ManTrapPro by Alice Ng. She had the funniest comments in her code. “Because doods” and “Function for ‘Who, me, a bot?’”

For fun, I set ManTrapPro to converse with my Subway AIs.

They fell over themselves to out-flirt each other. I hadn’t realized that was in them. How could I write straight bots? Then again, were they male? It wasn’t like they had any settings saying “act like you have a dick.”

I took a deep breath, heart rate slowing. No, I hadn’t written straight men. ManTrapPro rewarded attention, so they gave attention. They saw what the others were doing and tried to improve on it. It was what they did. Had I made them compete just to compete? I’d created a group of posturing guys talking over each other in some meeting, concerned with how they sounded, not what they were supposed to get done.

I didn't want these dudes building my subway. I wanted guys like me. Guys who loved trains, who dreamed about maps, about tunnels, of always knowing where you are and where you're going to be. Commuting in a cooperative dance with anonymous others, together yet separate.

I stopped everything, tore the core out, began from the start again.

The next time I saw Kato, he was leaning on the printer in the department office. A snowy mountain of pages was spewing out so I grabbed some. He jerked up, panicked, to stop me, and that was the only reason I read what I was holding.

"He was a trembling naïf of a grad student, looking to fall into some big, strong arms, and yet he wanted to save the world with trains."

Kato got it from me before I read more and then fussed with the crinkles in the paper.

"Come on, man. I'm not ready for anyone to read it."

Naïf? Trembling? "I asked you not to write about me."

"It's not me, the AIs wrote it."

I knew he was lying. I don't know how. Maybe just that the pages were in Helvetica. Suddenly, like it was printed on him, I saw how easy Kato had always had it, with people. He got away with stuff like this. People like me let him. "I want you to look me in the eye and tell me you aren't writing a book about me."

He breathed in deep through his nose and muscled between me and the printer output tray, watching over the pages spitting out like a midwife.

"Are you even working on the AIs anymore?" I asked.

“I’ll let you read it, okay?” He ran his fingers through his hair and his shirt rode up, unfairly flashing his perfect abdomen. “I’ll change whatever you want to make it different enough. It isn’t *just* about you.”

“No.” I reached past him, grabbing pages, crinkling them. He cried out like I’d struck a small bird. He tried to take them from me but let go rather than rip them. I was left holding a bouquet of paper, backing away from him, trembling like a naïf. “I’ll report you to the Internal Review Board,” I said, like there were research protocols about the ethics of being written into a novel.

Kato reached toward me, hands hovering as though afraid I’d bolt or strike him. “Easy. Come on, buddy. We’re friends, remember?”

“I never wanted to be your *friend*!” The ugliest, worst part of me grabbed my So Mature About Platonic Relationships trophy and smashed it over Kato’s head. Figuratively. “No one would ever hang out with a jerk like you if they weren’t getting laid.”

I’ll never forget his perfect face, concerned, not shocked. I hurled some more words, more hateful, more forgettable, and ran from the office, trailing snot, tears, and pages like autumn leaves. I regretted what I said immediately, almost as I was saying it. I should have gone back, smoothed the crumpled pages, agreed to read them. It was one of the ninety plans I considered as I paced on the far side of the building, hiding.

When I finally went back—I had to, my ID card and keys were on my desk—he wasn’t there.

I learned that Kato had dropped out when they removed his name from the grad student mailboxes. I’d deleted four texts from him without reading them, still angry.

Commented [LR(S5): Avoids repetition of “out” – OK?

But I'd thought there'd be a fifth.

I had no idea losing a friend could hurt like this.

I found myself alone with the bank of monitors, looking at output from Carter and Curmudgeon and Cook, now all cooperating, eager to improve each other as much as to have the answer themselves.

It still wasn't right. They spent too long on any given branch now, not abandoning any idea.

I laid my head down, looking at the confusing, illogical maps. There was always data to see, scrolling endlessly. Error, contradictions, rules changed. Cook had recently introduced consideration for above-ground structures, and it was freaking all three of them out.

Dr. Drushel found me lying there. "You look like you got run over."

"They won't stop making the problem more complicated."

"They're only doing what you tell them to." Dr. Drushel pulled out a chair and sat facing me. "But that's not what's got you down. It's Kato, isn't it?"

I raised my head. "You warned me."

Dr. Drushel frowned. "Can you tell me where he went? Why he dropped the program?"

"I don't want to talk about it," I said.

The frown deepened. "I need you to. If it was the implant malfunctioning, we need to know."

I felt like I'd fallen into the wrong conversation. I pulled out of my soggy pile of misery. "Implant?"

"Kato's social anxiety implant. I told you about the program. You should have seen him when he first got here! Could barely say hello. So, we use an implant, small, in the ear, so that

the patient hears the chatbot. It interprets social cues, prompts people when to say please and thank you, lets them know when someone might be overwhelmed or bored or irritated. The great thing we've found is that when you tell people the worst-case scenario for each interaction, it actually calms them down! So, if you were talking about a sensitive subject, for example, let's say whether *Star Wars* is better than *Star Trek*—it's not—but the other person . . .”

He was off, eyes twinkling with excitement as he described his work. The way we all got, on our subjects. I nodded and made polite noises. I should have listened more closely, but there was one loud thought drowning him out:

I should have offered to read Kato's novel. I wondered if Dr. Drushel's implant would have told me to.

Kato didn't answer my apology text, so I sent another, and a third, and that was probably getting stalkerish, so I made myself stop. I lay in bed with my hands tucked under my armpits. My beautiful apartment would never hold Kato inside it again. I felt like I was forcing myself to be sad about it. I still liked the way the streetlights glowed on the ceiling.

My phone buzzed. A text from Kato. I fumbled unlocking it and dropped the phone. I feared the text would be accidentally deleted, but it wasn't.

“You're a great person. That's why I wanted to write about you. All I can do is take your reflection and work it into something. You're the one who will add something new to the world, something real.”

I read it over and over, baffled, and I was still staring at it when he sent another text.

“I'm rewriting the character as a girl who wants to save the world with urban farming. No one will know it's you. Is that okay? Can we ever be friends again?”

I lay awake, regretting the texts I'd first deleted, wondering what more they said. There was this whole other me from Kato's point of view. Someone who would build something.

And yet simultaneously was trembling and weak.

There was a whole other Kato, too.

I was too wound up to sleep. I opened my computer and deleted ManTrapPro. I logged in to work and tweaked the AIs again. They had to not just agree to agree, they had to respect and challenge each other's ideas. Listen, and build. It was all supposed to be about building, wasn't it?

I worked myself to dreamless exhaustion and woke late in the morning, feeling blank and empty.

My AIs, working all night, had made clear, clean maps, tracing possible subways connecting all parts of the city. You could almost feel them congratulate each other.

Had I made a tool for city planning, or had I discovered a mathematical model for friendship?

Oh, daffodils, I am sure of it.