



Qishu



I took a sneak peek out into the cubicle farm, just to make sure it was a Kwan-free zone. And Siggy-free, for that matter. To my relief, L7 was already fairly a ghost town at this late hour, so I slipped out and navigated the elevator maze down to street level. It seemed like the security doors took some extra time considering whether to let me out or not. Ultimately my plisto won, and into the bitter chill of the evening I strolled. Needed to clear my head a bit before launching into the land of Qishu.

When I was a kid, I'd take my life in my hands not a hundred yards from this exact patch of ground, darting in and out of East Jeff rush hour traffic on my bike for a last chance at pulling some wire at one of my prime fishing spots before the sun went down. You could still make your limit then, in an hour or maybe two, right off the riverwalk. This was when the Detroit River was making a comeback, you could fish crappie and bluegill, northern, channel cats, freshwater drum, yellow perch, all kinds of bass - rock bass, white bass, smallies and largemouths (if you knew where the structures were) - and even some monster sturgeon had reappeared. But my forte was "pulling wire" as everybody called it, trolling for walleye pike on a trusty old homemade handline. Didn't realize at the time that it really was the last hurrah, the final fake-out mother nature gave us before the fisheries permanently cratered. Never gave a second thought back then that I could throw a line into the water and yank up a keeper, pedal home and have fresh grilled fish in a half-hour.

Two decades later, I leaned into a brisk, biting cold drizzle on a much different-looking riverwalk. It was now the private playground of MitsukoTek employees, as evidenced at that moment by the fact that there was not another living soul as far as the eye could see in either direction, aside from yours truly. Just me and the Canadian casinos twinkling in the night over there across the river, a glowing, mile-long fuse that showed no signs of burning out.

Another result of these last twenty years of the American Empire's decline was also completely unexpected. It was the fact that, due to the unique conditions of the birth of this, my glorious nation, which engendered the largest extended experiment in democratic governance in human history, there was no other similar empire to step into the breach when shit started going to the dogs.

China, which was the only other legit candidate for new global superpower, lacked the revolutionary freedom of its predecessor, accustomed as its populations were through long history to ruling dynasties, so its slow-footed move from the final dynasty - Communism - to an uneasy "Socialist Market Economy," left it without the necessary empire-building bone. It was kind of a disappointment to many

of the Professional ‘Merican DoomSayers when it turned out that the Middle Kingdom was far more interested in the rest of the world, particularly the United States, as an investment opportunity, rather than a global foe. Its new manifest destiny was therefore quite modern. It didn’t consist in offering the locals diseased blankets and bait-and-switch tactics, or if that failed, overwhelming them with military force. It was strictly economic warfare of the most insidiously effective kind - American jobs.

As a direct result of near total governmental gridlock which began with across-the-board obstruction of the policies of our nation’s first black president, this process fit super smooth with the gutting of our organs of federal governance which shortly followed. First in the short glorious reign of Dandy Don, the ol’ Red Regent, right through the “fake elections” of 20 and 24, straight on through to our current prez, Señor General Wilton Placido, or “MaxiMelt” (as he was not-so-affectionately known to audiences of StRm8nk’s popular “Build a Candidate” project). But ultimately, political opinions aside, the effectiveness of the much heralded “Sino Success Story” was made manifest in the simply unchallenged power and influence of my own employer at that moment in history: a rapidly expanding Chinese conglomerate operating under a Japanese name as the largest employer in six of the biggest cities in the U.S. And a business entity entirely unknown only one decade prior.

I refer to this history - some unique to me, some obviously well-trammeled soil - to give you some context, to set up the ol’ mise en scene, regarding the brave new world, within which, one bitterly cold night in early spring, high up in MitsukoTek Building 2, Level 7, I would shortly find myself learning to read and write a new language with keen hopes of being launched for an indeterminate period into supersynchronous orbit doing who knows what.

Space Monkey Victory Checklist

Tools:

1. Human brain, standard issue (non-augmented, for learning and career advancement).

2. Qishu cube and trusty gonzo rhombus, 2nd gen, circa '33 (for number crunching and code creation).

3. Protocol (nanotechnically enhanced Dexedrine for maximizing the focus and output in the intraparietal sulcus region of tool 1).

And go.

Because tick tock tick tock.

I peeled off my rain-soaked jacket and hoodie, and with true solemnity, in memoriam for one of my favorite long-extinct species, carved out two white-rhinotusk-sized Protocol rails on the pristine polycrystal surface of my coffee table, and got to work. I should not fail to point out, in addition, that I happened upon an empty nickel window bag that had previously held a handful of good old-fashioned *psilocibe cubensis* mushrooms. So, I shook the residual blue flake dust of that in there too. Might as well activate the prefrontal cortex of tool 1 while I was at it, was my thought at the time. That accomplished, I shut off every possible avenue for incoming communication, and took a perch in my sweet new Regwan ass-cloud.

Quick sidebar. I've been surprised during my travels how few people really take advantage of the increased productivity offered by somewhat sensibly maintained off-brand drug use. People freely take supplements of all kinds, overpriced and underfunctioning OTC junk, legit and semi-legit scrips for controlled pharma, but it seems strange to me how many colleagues just choose to stick between the guard rails when some quality inexpensive non-surgical neuro-boosts are readily available. Take for example the black market for Protocol, which began, in the time-honored tradition of many narcotics movements, as a recreational drug used to enhance the enjoyment of live music spectacles. But even though the drug's main pied piper, Charles Napier Gill and his QJP, (or just QP, the strange and perfectly illogical successor to EDC1), converted Protocol from a little known neuropsychiatric brain-imaging assistant to the new MDMA in a matter of two years, in my opinion, few grasped its deeper benefits.

While I'm not an expert on which of Protocol's particular attributes affects aforementioned region of the brain, or how it enables one to dance all night, I've

discovered that conversely it allows me to sit still for seven or eight hours working at complex mental tasks with great imagination and pure peak intellectual acuity. The only drawback, as far as the obligatory “payment due” from the Drug Gods is concerned, is the need immediately afterward to carb load about eight thousand calories in as short a time as possible before passing out for the next day.

And so, as a result of this calm clarity and extended function granted me by Tevin Brother, I was hopeful that in a matter of hours I would be able to fully ingest this new Qishu language. But as I later deduced, it was the nearly pure magic mushroom shake I added as an afterthought which, at the end of the all-nighter, gave me a terrifying glimpse of a highly improbable new world.

Writing computer code is not really about numbers, or even the source code itself, bottom line. It’s about solving problems. For instance, a lot of my pure math buds at Harvard could not understand how some C student from a middling Midwest school could be a better coder than them. It drove them crazy when every new must-have app or gizmo turned out to be invented by some dropout from their high-school, (such as my sister, for example). But it’s because a lot of times, A students don’t have to spend much time solving life problems based on, or related to, their shitty grades, while it’s pretty much a full-time occupation for C (and lower) students, at least the ones with some ambition and real talent. I was one of those weird high-school hybrids who identified with the C students, (as, in my case, that C stood for cash-poor) and hung out with them, making me one of them, for all intents and purposes, whilst preciously guarding the fact that I was actually one of those asshole A students, and worse, a proto-physics major to boot.

As a direct result of that background, I had been thinking, right from the jump, couldn’t stop thinking, really, about that long block of numbers Doc Yu had rained down on us at our first briefing. That was obviously “The Problem.” Or, more likely, some small aspect of whatever the actual problem was, which kept the rest of it hidden from view. The entire time I was learning Qishu it was in the back of my mind. Or more accurately, looming before me like a threatening and beautiful, glimmering, glowering, approaching mountain. That was the place we were all going, or at least the one of us who won the contest.

Qishu, according to Professor Big Panda, was designed specifically for Sat9. What became evident in the course of the night, once the Protocol really started firing, was that whoever cooked up this code, they had a good, weird sense of humor. They seemed to have based the spirit (as well as the semantics and syntax) on a popular old language called Ruby, created in the mid-nineties by one of the coolest dudes in coding history (IMO), Yukihiro Matsumoto, who everyone in the coding community has known ever since simply as Matz. Ruby was used to birth further progeny, chief of which was Rails, (Ruby on Rails) and its latest great-grandspawn, ubiquitous now in most 3D and holo animat sprouts like the one I prefer, RailRoids. Thing is, though, Ruby was designed for web applications, not satellites. So that was interesting.

My forte, as you know, was C++17, which predominantly uses what's known as an imperative programming paradigm (somewhat like Ruby). To put it in the crudest and most basic terms: I tell computer what I want and how to do it, it does it. That was the first twist of the journey: that although the semantics (symbols and meanings) and the syntax (grammatical structure) were derived from Ruby, Qishu did not use an imperative paradigm. It used what's known as a declarative programming paradigm, which means it provides the system with the logic it wants it to use, but doesn't dictate control flow - that is, it doesn't tell it how to do it, just what it wants done. Qishu seemed to take this to a crazy extreme. The language and structure were poetic, descriptive and elegant, and designed to be written in flexible arrays, something like stanzas of compound questions or thoughtful suggestions. It seemed a whole different species. I was in hog heaven. It was the first moment since I gave up the dream of Nobel Laureate Physicist half a decade ago that I felt the embers of creativity starting to glow a little bit again.

Even so, after who knows how many hours of closely parsing, line by line, the entire source code, I had not found a single quantifiable error. It was lean, spartan, no redundancies, not a speck of kludge. It was like scanning a perfectly groomed, multi-level garden complex with not one blade of grass out of place. If there was what Yu had said was "human error" somewhere in it, there was simply no way one person - let alone a rank novice to it like yours truly - was going to root it out in one session. Given the plasticity of the language itself, it was like

looking for a needle in a haystack that was itself in a hall of mirrors. I had a sudden premonition that this may have been exactly what we were supposed to find. It seemed to fit with all the attendant hoo-haw surrounding this whole deal, from my theatrical “bust” and strong-arming, to the contest itself. As for “The Problem,” its frosty peaks would evidently remain there dead ahead, looming, shrouded in clouds.

So, I went in a different direction.

After some period of time - not sure at that point what time actually meant - I tried to boot up my first Qishu program. It was supposed to be a fairly simple animat of the old classic Gosper Glider Gun. The glider gun was discovered by famed maverick mathematician Bill Gosper, as the first example of an infinitely growing pattern from “Conway’s Game of Life,” a cellular automaton conjectured by Hugh Conway in 1970. It was created on an orthogonal two-dimensional grid of a certain number of squares, called cells. Each cell is in one of two states, dark or light, on or off, that is to say, “alive” or “dead,” hence the “game of life,” and it’s based on a few very simple rules about how each cell switches between alive and dead based on its initial conditions and the cells surrounding it. That’s it. It’s a very simple, zero-person game, devised to resemble real life processes, so it’s random and chaotic for a long time until patterns begin to replicate. That’s where you get fun little repeating clusters of live cells named after what they resemble: loaf, blinker, puffer, toad, glider, pulsar, etc. At a certain point, the glider cluster “mothership” starts to “shoot” out a consistent stream of patterns which appear to wriggle in formation across the grid, hence “glider gun.”

Try as I might, however, I could not get a damn thing out of what I thought was quite a nifty little program for an animat sprout. I essentially translated the initial conditions and rules for a Game of Life into what felt a lot like a poem in Qishu, requesting that if it would be so kind, or felt like it, perhaps it would generate a three-dimensional version of the automaton. I had used the rhombus’s native spatial rec widge to create a 3D grid the exact size of my office, but when I fired up the sprout, nothing happened.

At the same instant, I noticed something out of the corner of my eye. Sort of like when you spot a bug moving on a restaurant wall, something which is definitely not supposed to be there, and you really don't want to see. It was in the furthest corner of the room, and it appeared to be sort of a gathering darkness. Hackles rose on my neck, familiar hackles. Bad trip hackles. I had never in all my experience had what could be described as a "bad trip" on mushrooms. Acid, sure. Even good trips on LSD are bad trips. So, this just threw a scare into me.

I sat poised there, lost in thought, trying not to look over there, when I heard a strange, rhythmic sound. I thought at first it was my heart suddenly pumping extra loud (not an uncommon occurrence on Protocol). But it got louder and more insistent. I got up to investigate, thankful for the distraction from the glowing black mold in the corner and found that the sound seemed to be coming from the other side of my door. I slowly cracked it open. I found Kwan poised there, mid-knock, Siggy right at his elbow, both looking at me with surprise and alarm. Beyond them I took in the entire floor of L7 staff working, conversing, carrying on in full mid-day swing.

"Hang on."

I held up a finger, closed the door a bit, and without even daring to look into the far corner, dashed straight to my rhombus and quit out of Qishu. Kwan tentatively pushed the door open and took a step inside. Siggy peered in over his shoulder.

"You realize we're presenting in five."

Kwan actually looked concerned.

"Yeah, of course. Why not? I was just...just you know. Finishing up." My voice sounded strange, like rocks scraping against each other under water.

"So, you coming?"

Siggy's face twisted into a mean smile.

"Yeah, just lemme grab my...my..."

"Things?"

“That. Yeah.”

I hurriedly got my stuff together and struggled into my still damp hoodie. Tossed my bag over my shoulder and met them at the door. Siggy had already marched off, suddenly in an obvious good mood. Kwan looked at me with dread.

“Dude you look like a drunk beggar. With the flu.”

“Perfect. Means I’m ready for Yu. Not you, Dr. Yu, you know what I’m saying.”

I moved off after Siggy quickly, to get away from Kwan’s prying and at the same time strangely caring eyes. My stomach suddenly felt queasy. Although I didn’t actually cognize it at that moment, it had been roughly eighteen hours since I’d sat down to work the previous night. I thought I must still be tripping hard, which seemed impossible, because mushrooms don’t last that long.

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I maintained what I thought was some composure in the hallway outside the theater as we nervously awaited our summons. I was trying to keep it cool, which was tough whilst also maniacally sucking down the third straight bottle of gHost-Vape I’d grabbed on the way out of L7. I was just trying to cram some electrolytes down before the big show, when Siggy leaned in close.

“You’re still blazing, aren’t you?”

She gave a little head nod. I glanced past her to the polished chrome surface of some sort of wall art behind her. My pupils were indeed still big black pools. Holy shit, what happened? Some kind of cross-reaction between drugs which caused my system to hang? How long had I been awake? At least, let’s see...thirty...four hours? Okay, I just had to hold it together for another--

The theater door whispered open, and the severely coiffed Chinese woman from our first briefing stepped aside for us to enter, single file. Thankfully she stood respectfully, eyes averted, as we all passed.

They were really going all in for this “performance.” Moses Yu stood in the center of the stage, arms behind his back, in his signature lab coat. He smiled as we entered and indicated for us to join him up there. Arranged downstage of him were three throw-back steel office desks with wood rolling chairs, and behind him, a giant blackboard, complete with chalk tray and white-dusted erasers. It was like walking into a cliché still life of a 1960’s MIT physics professor’s office.

Dr. Yu handed each of us a different colored piece of chalk as we moved to our desks. Clearly, we were being given the option of physically etching our discoveries on the blackboard for immediate savaging. None of us would be stupid enough to fall for that, I was pretty sure. Except, of course, the one of us who had absolutely nothing else to show, due to possibly the stupidest plan of attack ever conceived for winning this contest. I was going to have to throw some deep mathematical mumbo jumbo up there and hope I could figure something out on the fly. I intentionally did not look too closely around the darkened theater, not wanting to discover anything else that wasn’t supposed to be there. That was all I needed at this point.

Dr. Yu made a big to-do over picking our order of presentation from a specially prepared bamboo box on one of the tables. Someone had graffitied “Shrödinger’s Box Lunch” in English. Someone, somewhere up top found this hilariously funny, no doubt. I knew in my gut that Yu had the order pre-determined, but such was the way things were done in this company from the first day I worked there. Lot of theatrical presentation about things that were immutably fixed. I said, to myself, as he went in for the first name, ‘Kwan.’

“Mr. Kwan goes first.”

Dr. Yu smiled, and I smiled over at Kwan, who took it as assurance that his position indicated his top seeding in the contest. He confidently flipped open his rhombus as Yu went into the box a second time.

‘Siggy’ I said to myself quietly.

Big Panda stared at the name he had just withdrawn from the box, as if surprised.

“Ms. Jarvinen. You will follow Philip.”

Siggy was slightly irritated, as she knew, like I did, that this order indicated the favorite, which was me. But she also had an irritating smirk on her face as she avoided my gaze, having perfectly assessed my current condition.

Dr. Yu was gazing at me. He nodded.

“Which means, Mr. Minor, you will have the last word.”

I was so busy trying to figure out what I was going to do when it was my turn that I only remember certain key details of what happened next.

I recall that Kwan actually went to the blackboard and sketched out some interesting concepts. He was staking his cred on the idea that there wasn't anything intrinsically wrong with the Qishu source code, but on the rather obscure concept of it allowing for “syntactic saccharine.” It was a pretty opaque angle based on his proposal that Qishu allowed gratuitous syntax. Which was like telling Dr. Yu (not to mention the entire Qishu dev team) that your problem is you've made this language too easy to write, thereby encouraging user error from lazy or incompetent coders. Kwan intuited that the source code was likely solid, so he gambled and took a guess that would, under normal circumstances, be tough to argue against, as the concept of, if you will, “saccharinity,” is a judgement call. Neither is it, of course, an answer to the assignment, or true, but I did give him credit for a unique, if wild, guess. Dr. Yu did not. He calmly eviscerated him, not allowing him to sit down until the dissection was complete. He addressed Siggy and I, ignoring Kwan, as he explained how our esteemed colleague had misunderstood how deceptively complex this language and its grammatical structure was, and how sophisticated the computational ability of Qishu could be, even just on this rinky-dink linkset interface. It wasn't just for show, he was warning us that if we were preparing to offer anything similar to this, to think again.

Siggy got up and drew a large circle on the blackboard with green chalk. Then she drew a smaller circle inside that with red chalk. Then one more within that one, in yellow chalk. Try as I might to keep those lids open, I started to nod off when she got to her thesis which had something to do with metaprogramming and zzzzzzzzzzz that was it. I snapped awake in time to see what could best be de-

scribed as a ten cent animat floating above her rhombus, with the words “Hello world!” like an ancient neon sign in alternating colors. God, so insanely obvious, and a little embarrassing. It made me think of a puppy proud of the tiny dump it’s just taken on the kitchen floor. Except for one thing. She had managed to write and execute a program with Qishu, as rudimentary as it might have been, which made it more than I had, and Dr. Yu appeared to be buying it. I had a sudden piercing pain in my gut as I realized I could actually lose.

My rising blood pressure was somewhat quieted as Dr. Yu began to deconstruct Siggy’s “metaprogramming” theory. I wish I had stayed awake because it sounded like a really good stab. I got from Yu that she had based it on Czarnecki and Eisencker’s work on generative programming from the turn of the century, specifically an application’s ability to transform other programs, and to also modify itself while operating. The problem was, while it’s true for many applications, she didn’t absolutely know for certain if it was correct regarding Qishu. So, even with the clever sourcing, it still essentially blamed the creation of unpredictable outcomes on the program making changes, in true heuristic AI fashion, to itself. Which turned out to be just a slightly better presentation of Kwan’s angle. I wondered if they had worked together on this thing, or more likely, she had worked him over for his idea, and slightly improved it. And threw in the obvious and gratuitous “Hello world!” for insurance.

I was trying to stay awake, and paying attention to all this, while surreptitiously attempting one more time to boot up my glider gun animat.

“Do you wish to join us, Mr. Minor?”

When had Siggy’s prez actually finished? Big Panda gazed down at me with an expectant look. Siggy and Kwan were also waiting to see what I had. My mouth was suddenly dry. I felt like my head was two sizes larger than usual.

There’s a habit that I have, which is maddening, even to me. It is probably best described as “nonchalant superiority in the face of certain disaster.” In this case, working on hour 35 narco burnout, I didn’t disappoint. The next thing I knew, I was up on my feet at the blackboard, flipping a piece of white chalk in the air. I had literally no idea what I was about to say or do. So, I set the tip of the chalk at

the very top left corner of the board, and in a burst of inspiration, proceeded to trace a rectangle along the outside edge, all the way around. Then, I proceeded, with the chalk lengthwise, to fill the entire thing in, as if painting with a roller. I ended up with a blackboard which was now filled in with white. I didn't even dare to look at anyone, so I just folded my arms and confidently took in my master-work.

And there was nothing more there. I had nothing. So, I gave up, and decided to just go with the truth. Or at least the truth, as far as I could see it. I heard myself as if from a distant point, like I was squatting on a ledge overlooking the scene there in the theatre.

“Let's call a spade a spade. I have no idea what the fuck is wrong here, what's the factor we're missing, what's the key, anything. And neither do you. I'm not going to stand up here and give you some bullshit thesis I'm prepared to defend even though I don't actually believe in it, like these two. Here's what we have. A big ass number that nobody recognizes. Right?”

I pointed at my giant white rectangle. As if it was obvious.

“And it got shot out of the ass of the most advanced gonzoy mainframe you've ever produced, which means it's the most advanced computer intelligence in the history of the planet. Upstairs, gèng gāo shat a brick, people's heads exploded, the Personal Director was avoided in the hallway for a few days. Is that about it?”

Dr. Wu stared at me with an expression I will never forget. It was actual pity. It was like, ‘not only how did this dumb ass whitey get into this room,’ but ‘how did he ever secure employment at any level in this entire corporation?’

“That's your presentation?”

I felt like he might actually charge me and start beating me about the face and neck. I had no choice now. No way out but through.

“No, that's not my presentation, that's a question.”

“And the question is?”

“Is that an accurate description of the situation surrounding “The Problem” you’ve encountered with the satellite’s mysterious transmissions?”

He shook his head, not happy about it, but he couldn’t help but agree that in a crude sense, yes, it was fairly accurate. A sudden very slight tingle could be felt directly under my left testicle. It’s alive! I dove ahead.

“So, then. My theory is this. There is nothing wrong with this source code. It’s clean, it’s efficient, it’s beautiful, it’s fun even, and I’m pretty sure you already know that. You know that none of us is going to be able to find any “human error” buried in it somewhere, because you’ve had the coding team doing nothing but searching for it since whenever these anomalous numbers started falling from the sky. The question you’re really asking is this: with all the disgusting piles of money MitsukoTek has shoveled into the R&D on this groundbreaking new satellite and its revolutionary new, tailor made programming language, why hasn’t it figured out what the number is, or what the fucking problem behind that number is.”

There was dead silence in the room. I didn’t wait for Dr. Yu to respond. I had just silently placed the chalk back on the tray and turned to go back to my “desk,” when I saw it. I froze in my tracks. My acid nightmare unfolding. Or, more accurately, descending. From the free-floating lighting grid, what appeared to be a multi-colored living Mandelbrot set. Or more accurately, an eel-like tendrill of paisley fractals, building and dripping and growing, starting to fill the air, right in the middle of the stage.

I was about to go into veteran drug-ninja mode, which is to just ignore scary shit and pretend it can’t see you, when a miracle occurred. I realized that everyone else was looking. They were all watching my growing hallucination too. It wasn’t just me. It was actually there!

“What...is that?” Kwan’s mouth was agape, staring up.

I saw Dr. Yu’s expression change to wonder, as he glanced around the theater. The strange growing fractal had also grown up and onto the outer walls of the whole place. And then one final amazing thing happened.

From the far corner of the room, back behind the dark audience seats, a small, beautiful little wiggling wedge of fractal, like a puff of chameleon smoke, taking on the color of whatever it was near, moved toward us, floated across the center of the stage, and was subsumed by the animat growing on the far upstage wall.

“What is it?”

Dr. Yu looked at me with a new expression. He was actually grateful. I realized in a flash of comprehension what had happened.

“Well, it was supposed to be a Gosper glider gun, but...I guess Qishu made some improvements.”

It was a cheap shot at Kwan and Siggy’s expense, but I couldn’t help it. Big Panda’s laughter was one of the highlights of my life. It seemed to rise from deep within and cascade out like church bells pealing. He laughed so hard, wobbling and rocking to and fro, that I couldn’t resist it, it was like a virus. It was ten times more infectious than even my recent laugh with Tevin Brother. We stood there laughing, watching Qishu gliders wriggle through the air past us, one after another, like colored puffs of cloud.

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And that, dear reader, is how this unrepentant, drug-quaffing, American ne’er-do-well ended up in an absurdly expensive and totally bitchen flight-suit, snugly belted into the capsule of Tianzhou 5, atop a Long March 11 rocket, on the Wenchang Satellite Launch Center in Hainan province, China, staring at a counter reading 5, 4, 3, 2...and...

Space. Monkey.

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