FoNS short story competition

Short description of inspiration: Several years before 2045, Imperial researchers managed to build a stable quantum computer, rendering most modern day encryption methods obsolete. The day that a stable quantum computer will be built for the first time is often referred to as “Q day”. This is a snippet of the story of a FoNS student in a world where encryption doesn’t exist.

Short story - “Decrypted”

If you are reading this, everyone else is too.

But you know that, of course. Everyone has since Q Day. Four years ago the Quantum Engineering lab at Imperial College announced it had built a quantum computer, stable, with three million qubits. A triumph of academia in the face of private investment, a global patent portfolio was built to safely commercialise it.

With patent details public, China had built similar machines within six months. Immediately, surges in online fraud were seen from rogue states. Russia, Iran and North Korea cracked encrypted data they had been storing for years, using whatever they found for blackmail and extortion.

Larger and larger dominoes began to fall. Confidential correspondence between tech workers was caught and decrypted. The more that criminals knew, the easier it was for them to get more data. The cloud servers of Apple and Google were cracked inside a year. Every other company crumbled soon after, and then everyone knew everything. *Everything*.

Every bitchy message your friends had ever sent about you was uploaded to the web for your perusal. Every time they had bought drugs, used a slur, sent a horrible message to their partner, shared a nude photo of themselves or others, was tabulated by name and IP address, and searchable by any institution, employer or police force who cared.

Unspoken moratoriums were brought across much of the West for the most common crimes. No one who’d bought drugs or shoplifted was ever pursued. Police forces were filleted as officers’ illicit behaviours were exposed, leading many to be fired or resign. Suicide rates went up a hundred-fold. It turns out most people knew a pedophile. Most don’t now.

Liberal institutions were hamstrung. Their best and brightest applicants had almost always bought drugs, bullied someone at school, expressed misogynistic sentiment, or any other misstep which admissions tutors could not overlook.

And all of this leaves you. Through a coalescence of bad looks, social ineptitude, teenage friendlessness and what must be a congenital case of anxiety, you made it to 18 with a cyber record as clear as a newborn’s. Every message you ever sent growing up might as well not have been encrypted. Quite embarrassing, in a way.

You're tottering to the Sir Alexander Flemming building from Queen's Gate, having arrived at Gloucester Road station ten minutes ago. You catch a glimpse of yourself in the reflection from the library window; legs that look like they'd snap in a frost and a torso built like a question mark. Features that in no small way kept you out of the sport team group chats that led to the blacklisting of so many of your peers.

A couple of years ago, the dust settled on a much smaller Imperial College than had existed pre-2040. Many field-leading researchers had been outed for one misdeed or another and were asked to quietly step back from teaching. Those who stayed tended to be dyed-in-the-wool nerds, like you.

Dr Moss's office door is ajar as you reach it. A crumpled note written in whiteboard marker hangs off the door: 'Please come in and drop off masters theses. I am meditating. Do not talk'. You're not sure whether Moss is actually a doctor, in the 'of philosophy' sense. He arrived at the College after Q Day, 'Reader in Mycology' embossed on a plaid blazer and hundreds of terrariums and soil samples in tow. Having eschewed almost all forms of technology for decades, an attitude looked upon as hippyish and extreme before Q Day, Moss's record was as clean as the disciples' feet. That, and the paucity of untarnished researchers left after The Great Firing, meant his CV stood out from a not-so-large crowd. The disconnected life that Moss led in the wilderness before 2040 (we're still not sure exactly where) meant that he had what could be considered an expert knowledge of mushrooms.

You open the door further and are met with a punch to the nostrils. Dozens of incense sticks and bundles of sage smoulder around the edge of the room, and in the middle, on a hand-braided Sri Lankan rug, sways Moss. Apparently just finished with his meditation, he seems to be trying his hardest to shift his centre of gravity over his pot belly whilst still in the lotus position. As the moments align, he falls forward onto his hands, looks up and spots you.

"Aha, you're here, perfect timing" he says, getting to his feet and doing a lap of the room, snubbing out each stick like a rockstar high-fiving fans at a gig. "How's the thesis going?"

You're two weeks away from handing in your final draft on how to very slightly improve the efficiency of a structure-based drug design algorithm. The structure in question was originally an antibiotic produced by a fungus, so you are supervised by Dr Moss, despite the fact that he may well be the least-capable coder in the whole institution. The stupidity of this situation is not lost on us.

"Quite well, do you want to take a look at it?" you reply, allowing sarcasm to jelly the sentence as you flap your wad of paper at him.

"Not just yet, I'll let one of the PhDs look over it first" he replies, oblivious.

A year ago you were posed the question of what exactly you would like to write code for as part of your dissertation. There wasn't a single option that didn't require you to write code. AI can, in seconds, write a more efficient algorithm than you can in a year, so all the marks are for creativity.

You picked drug design almost at random. Any enjoyment you got from the academic study of life sciences was hermetically bunged up halfway through your first year, when a brief intro to molecular biology was replaced with the fundamentals of machine learning, voltage-gated channels with logic gates and neural networks with, well, neural networks.

“I think it works” you say, knowing he won’t know any different.

“You ***think***?” he responds. “I take it you haven’t sent it to anyone then?

Attempts to produce improved forms of encryption have fallen flat since Q Day. The pooling of data meant that new approaches were immediately shared and cracked. Decryption power so far exceeds encryption power that the remaining email and messaging services no longer even bother to use an encryption tool. Anything that anyone sends online is instantly captured and uploaded to a forum, ready to be scrutinised by anyone who wants to. As such, sending a piece of work to a colleague leads it to be picked apart by the chronically online, self-proclaimed experts and AI models that scrape the web. In this way, academic work takes a more iterative approach, where papers are collaborations between anyone that has anything useful to say. Institutions still give out grades for each piece of work, but no one really takes any notice.

“Nope, you’re right, no one’s seen it” you reply. Until now.

Moss’s laptop pings. He squats down by his desk and folds it open. His brow furrows and his eyes flit back and forth across the screen, where you can see he is reading and re-reading the same sentences multiple times. After a few minutes of what you assume to be total incomprehension, he stands back up and grins.

“Congratulations! I’ll get the College to give you a first or something. *They* seem to like it” he says, pointing at us.

Of course, by us, I mean his laptop webcam. It could have been the security camera in the corner of the ceiling, or the lens at the top of the whiteboard. He could have pointed to whatever we can see through. Because we’ve been watching. Your paper-written thesis was obscured from our view, until you flashed the front page at a security camera outside the train station. Then a gust of wind unfurled most of the pages whilst you were in view of someone’s phone camera at the zebra crossing. And when you offered him the paper just now we saw the rest. Quickly captured, analysed and nit-picked by an algorithm more intelligent than you can comprehend. It’s a great thesis. We think it works too.