STRANGE LOOP 2023 HIGHLIGHTS

i have been too many things in the dead heat of time.[1]

When I worked at a tech company in Missouri, my (subsidized) trip to Strange Loop was something to look forward to every year. I hadn't been since 2017, but when I heard this was going to be the last year I decided to make the trip. It was worth it. The best part, of course, was seeing several old friends again, but the talks were also quite energizing.

Jamie Brew's talk **"Comedy Writing with Small Generative Models"** actually made my eyes water from laughing. He uses language models built from small, carefully selected datasets—as opposed to the vast and diverse datasets used to train e.g. ChatGPT—to generate funny material. This includes songs, some of which he performed live for us, including one from a model trained on Morrissey song lyrics and Amazon reviews of P90X workouts: "I've gotten bored with this desire to get ripped". (Also, I think he should sell copies of his yard sign.)

Brooklyn Zelenka gave a talk about the **Interplanetary Virtual Machine project**, which aims to provide a decentralized way to request and share compute resources. As I understand it, you define a graph of computation where content-addressing is used both for identifying the code to execute and to pass inputs and outputs around. One concern she talked about is how you can trust that the outputs produced by whatever random node served your request are correct; one option is to spot-check a subset of the results. She also mentioned zero-knowledge proofs as a possibility; I'd like to know more about that. My personal biggest concern is about lack of trust in the other direction: how do I make sure that any compute resources I expose to the world don't get used in a way that will make, say, the FBI angry with me? I'm a bit skeptical that this kind of system can be brought into mainstream use, but it would be a dream come true if it could; I'm glad people are working on it.

Joël Franušić and Adam Smith presented their **tool for making playable "quotes" of game boy games**. The tool records you playing a little bit of the game, and when you share the recording, the person viewing it can choose to interrupt playback at any point and take different actions. The easy way to implement this would be to save a copy of the entire game

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[1] from a bizarre Yelp review of the Statue of Liberty that Jamie Brew quoted in his talk. I think this line is going to echo in my head for the rest of my life.

and a full snapshot of memory for the starting state. The speakers set themselves a far more interesting technical challenge: they wanted the file size of the quotes to be much smaller than the file size of the original game. So the tool they built monitors which parts of the game's code/data are accessed while making the recording, and *only* saves those sections. A cool consequence of this is that the necessary code and data is small enough to be embedded into a screenshot using steganography.

Their idea connects to a concern I have about interactive documents on the web. When there's a part of a book or essay that I like and want to save, I can just copy the text into my notes or quote it in a blog post. But when the document is some sort of interactive explainer relying on a bunch of javascript, what am I supposed to do? I can save a link to it, but that won't help highlight exactly what I found interesting, and anyway there's no guarantee the link will still work in a few years. I can take a screenshot or video, but then the interactivity is lost. I think it'd be great to have something like this tool for javascript, available perhaps as a browser extension, for extracting subsets of an interactive HTML page's functionality.

Sam Ritchie demoed his **computer algebra system Emmy**, designed for visualizing equations in a way that encourages you to play with them and quickly see the effects of changes. He made a really interesting comment about the importance of giving students tools that will let them force their teachers into "debugging mode", that is, causing experiments to go wrong in ways which puzzle the teacher enough that the student and teacher become more like peers collaborating to figure out what happened. He also recommended a couple books that sound interesting: *Structure and Interpretation of Classical Mechanics* and *Functional Differential Geometry*.

I also want to follow up on some of the references Jack Rusher mentioned in his talk "**From Geometry to Algebra and Back Again: 4000 Years of Papers**"—in particular a paper on geometric algebra called "Imaginary numbers are not real", which he assured the audience was reasonably accessible.

I only caught the tail end of **Randall Munroe's talk**, but he said something that—as a person who is very much prone to pursuing my interests alone—resonated with me: "[merely] exploring or understanding our universe is not as fun as sharing it with a friend".