

CSC165 Is The Most Important Course You'll Ever Take

Michael Guerzhoy

Slides from:

The Future of Computer Science

And Why Every Other Major Sucks By Comparison

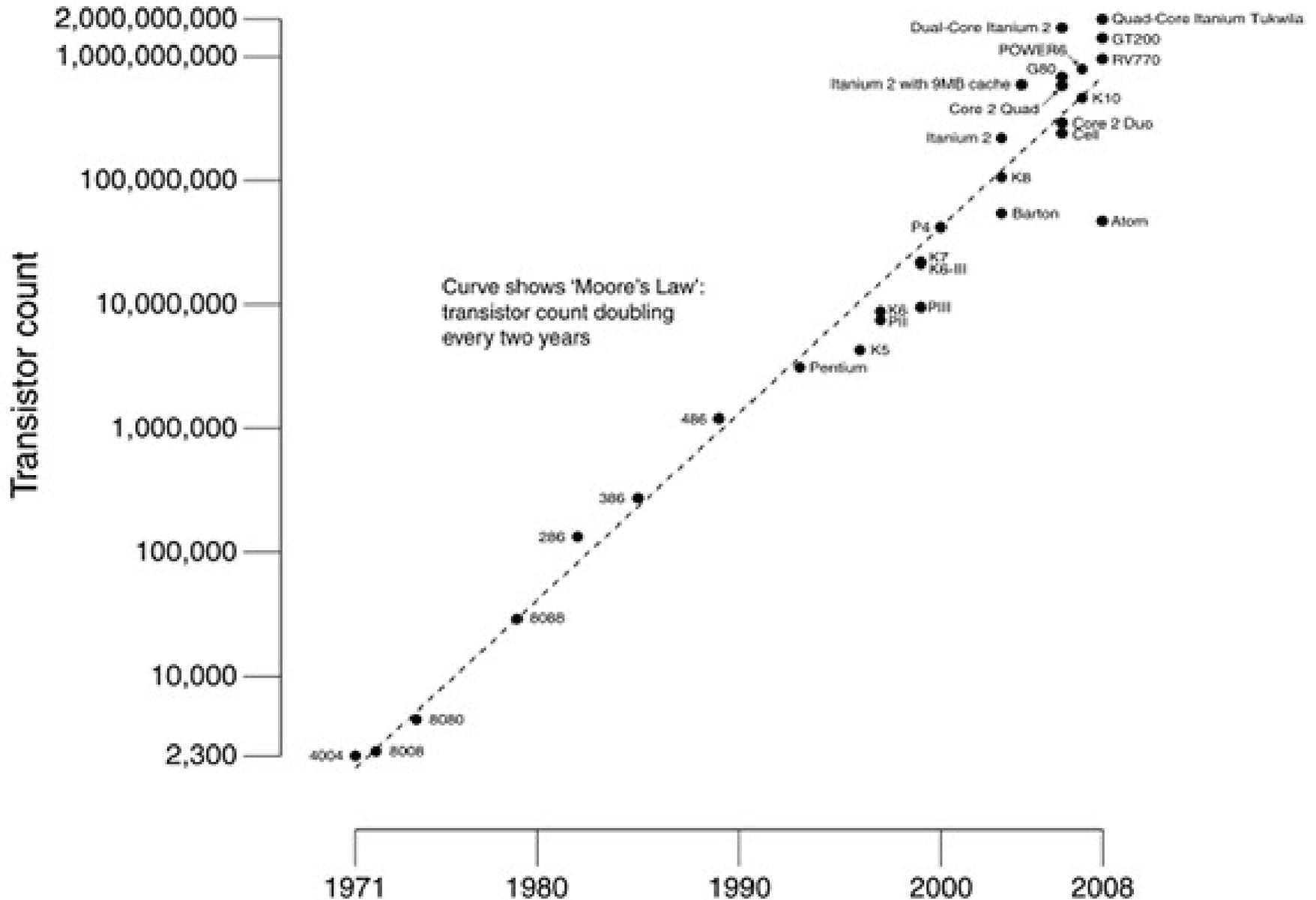
Scott Aaronson

MIT Computer Science

Stereotypes of CS Majors

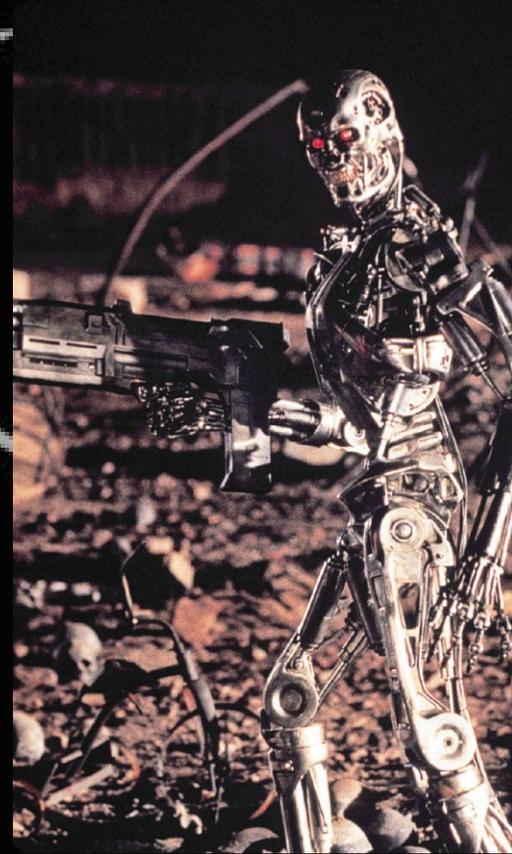


Moore's Law



So what's next?

Robot Uprising



Uploading our brains to computers; replacement of “real life” by the Matrix



The image shows a screenshot of a Facebook profile for a user named Carol. The profile is set to public and shows various details including her location, birthday, and interests. The interface is from an older version of Facebook, with a blue header and a search bar on the left.

facebook Profile edit Friends Networks Inbox home account privacy logout

Search

Applications edit

- Photos
- Groups
- Scrabulous
- Events
- Marketplace
- iLike
- more

Windows Live

Introducing Live Search

Carol Profile

is in class.
Updated just a moment ago edit

Networks: **NoddaCorp**
Stanford Alum
San Francisco, CA

Sex: **San Francisco, CA**
Birthday: **July 18, 1983**
Hometown: **Brooklyn, NY**

View More Photos of Me (16)
Edit My Profile

You are online now.

Mutual Friends (52)

NoddaCorp Friends
110 friends at Facebook. See All

Contact Info [edit]

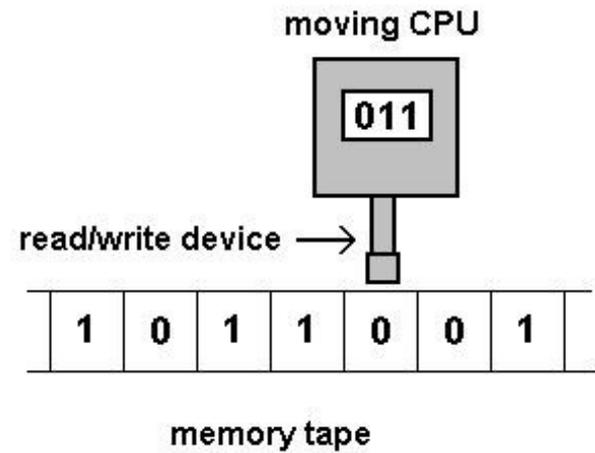
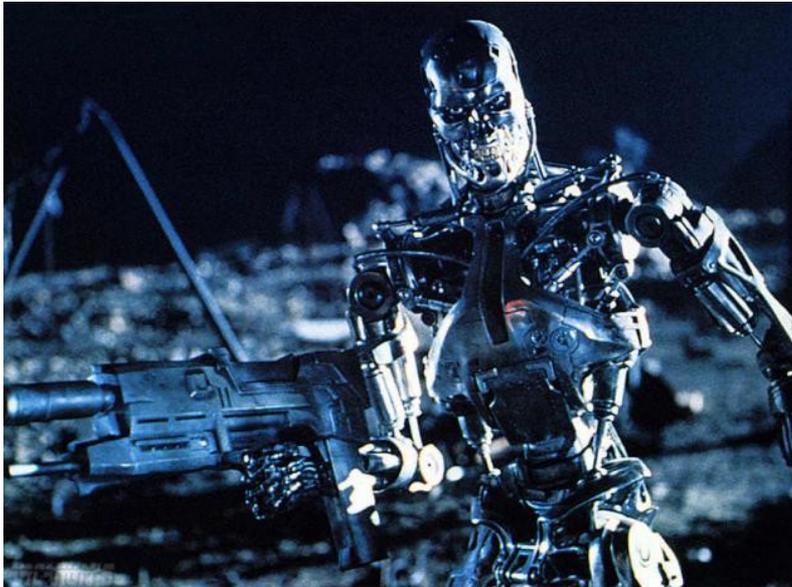
Email: **carol@noddacorp.com**

Personal Info [edit]

Activities: **food stuff, art, fixing up the house, friends**

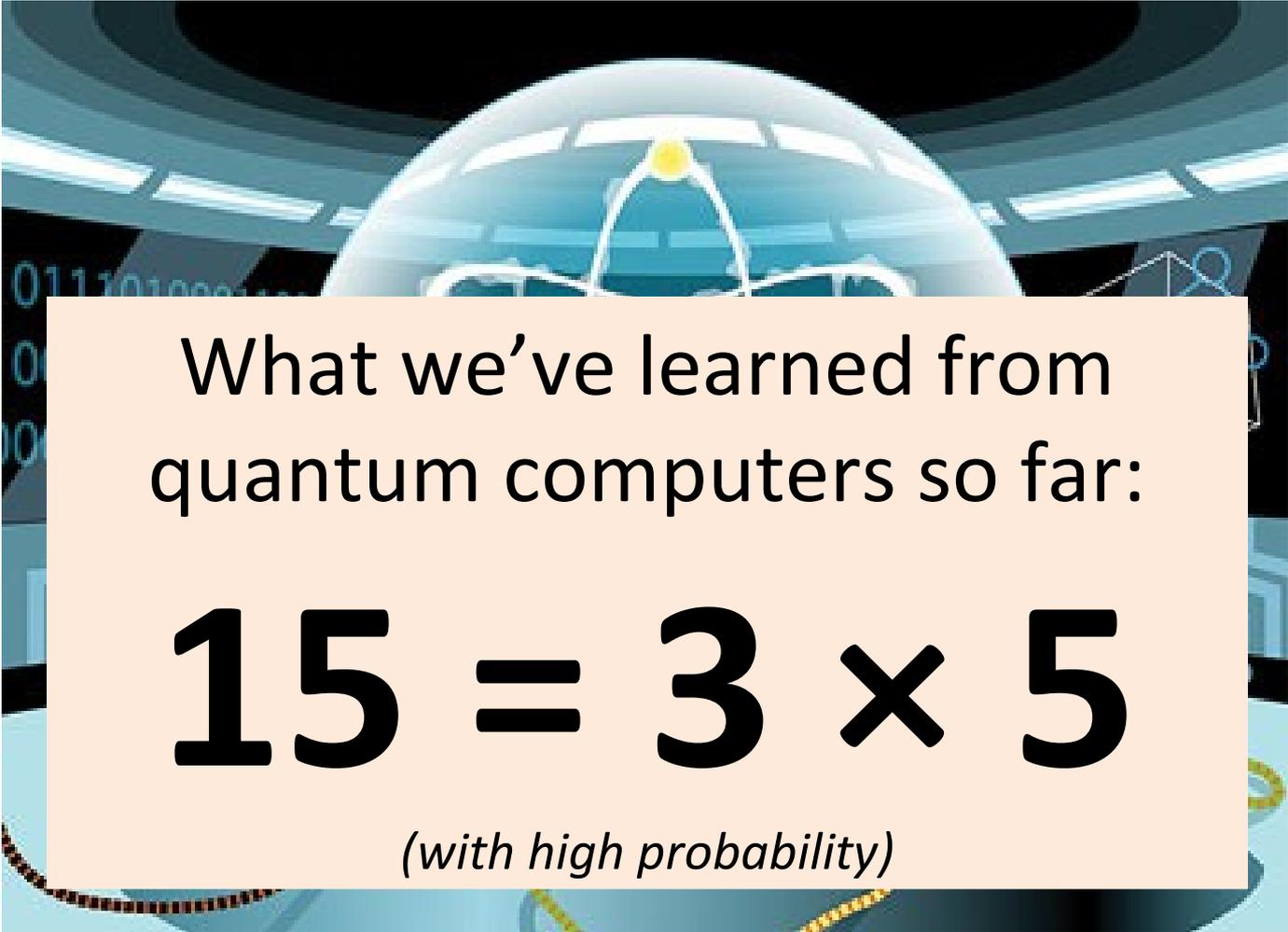
Interests: **making cool stuff, time with the family, fun (wherever you can get it), finding the vision**

Favorite TV Shows: **My Name is Earl, The OC (oh snap), The Office (either one), Team Venture, Colbert Report, Home Movies, Arrested Development, Home Movies, Weeds**



So what else is there?

Quantum Computers

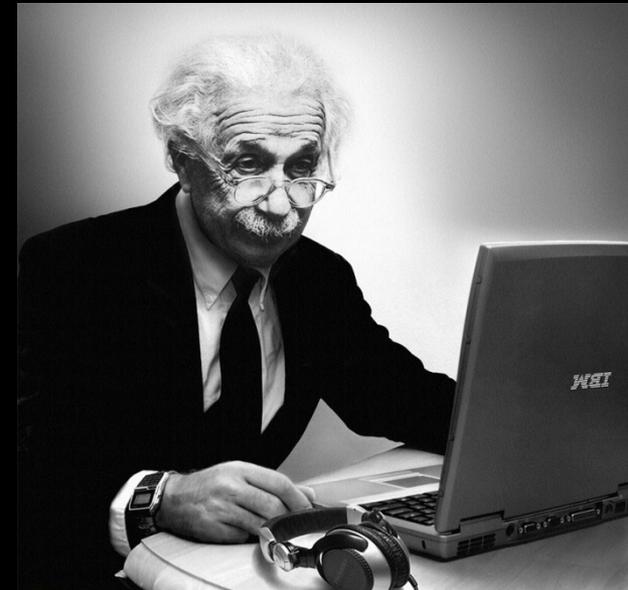


What we've learned from quantum computers so far:

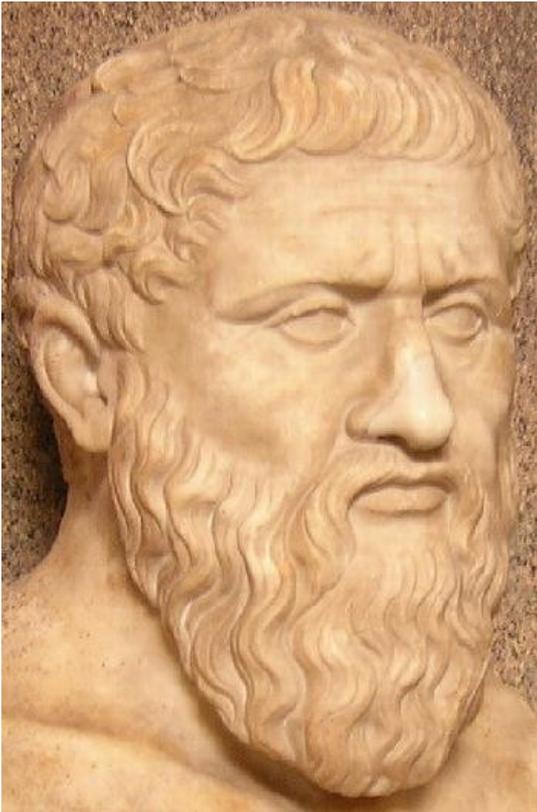
$$15 = 3 \times 5$$

(with high probability)

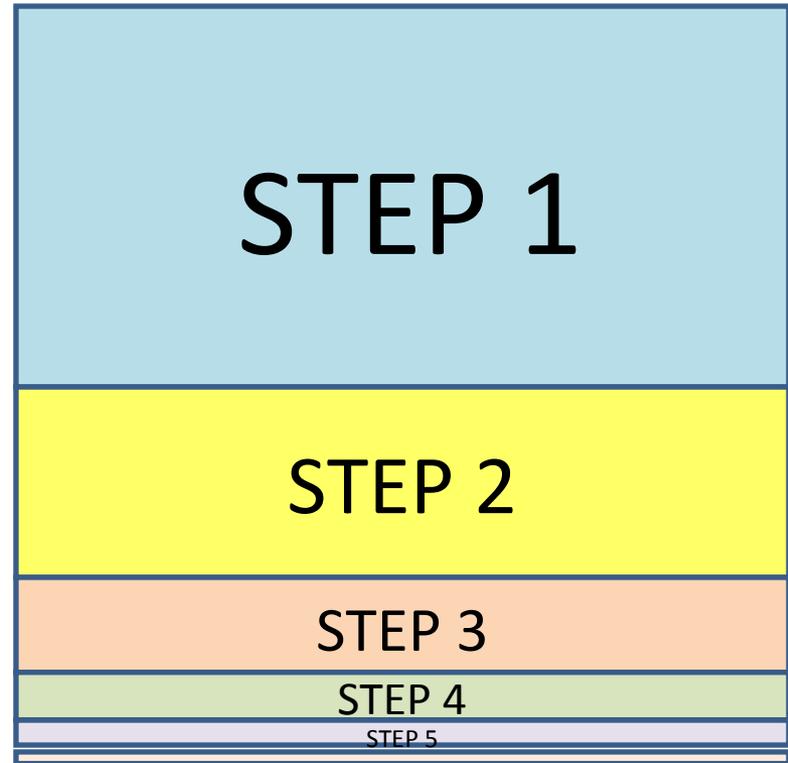
Relativity Computer



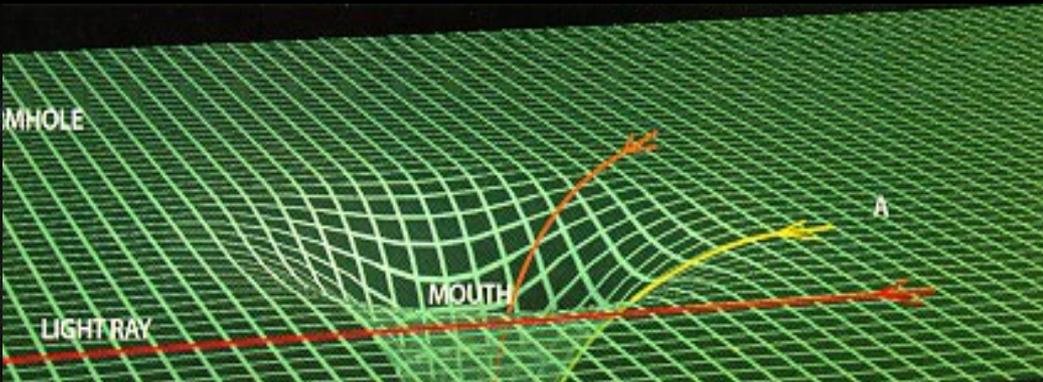
Zeno's Computer



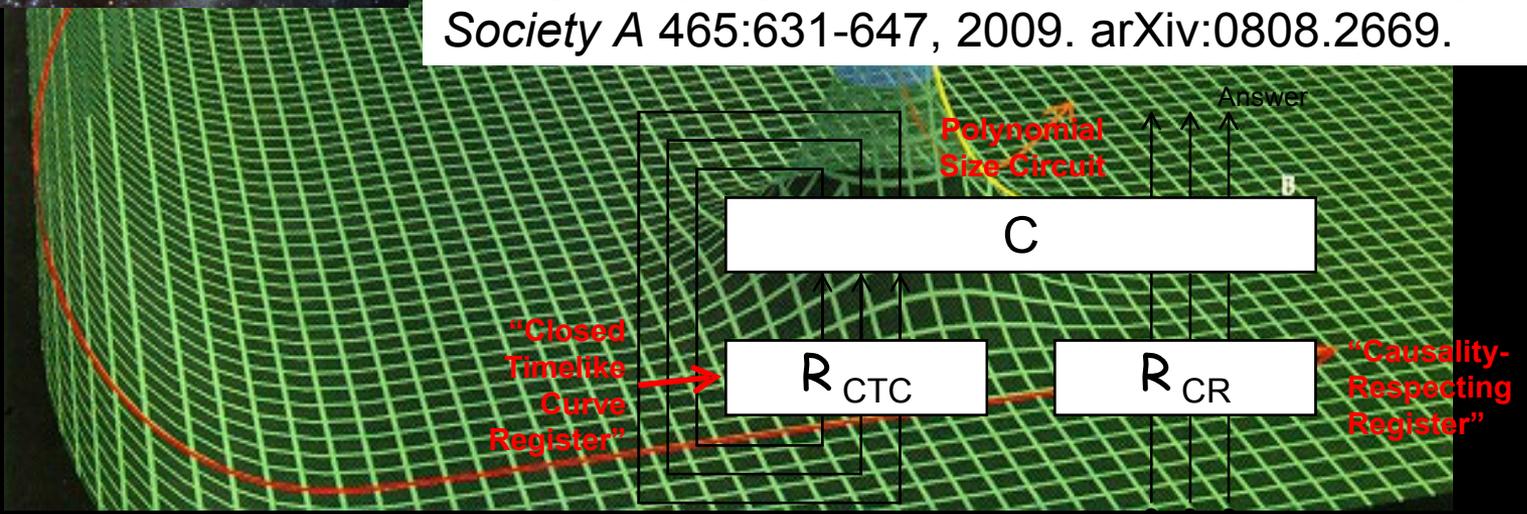
Time (seconds)



Time Travel Computer



S. Aaronson and J. Watrous. **Closed Timelike Curves Make Quantum and Classical Computing Equivalent**, *Proceedings of the Royal Society A* 465:631-647, 2009. arXiv:0808.2669.



Computer Science Is Interdisciplinary



Physics



Math



Brain/Cognitive



Biology



Economics

But it's not just about CS theory!

- You need to be able to reason about computer programs/algorithms in order to come up with new algorithms
 - Algorithms are everywhere: AI, computer systems....
- You to demonstrate problem-solving skills to get a job!

A question from an job interview

- How many prime numbers are there?
- Prove it!