









OUR CLUB'S MISSION

We are a group of students at Rensselaer Polytechnic Institute dedicated to teaching computer science to underrepresented high school and middle school students in the surrounding area. Our goal is to close the disparities in educational opportunities, specifically computer science, related to race/ethnicity, gender, and socioeconomic status by empowering our students with the skills and mentorship to succeed.







Who Am I?

Passions:

- Changing the world!
- Making CS education more accessible
- Lowering barriers to entry

{coding&&community}





Why should I code?

- Coding empowers you!
- It teaches you how to think in different ways!
- It is one of the fastest growing jobs in the word!
- It's super fun!

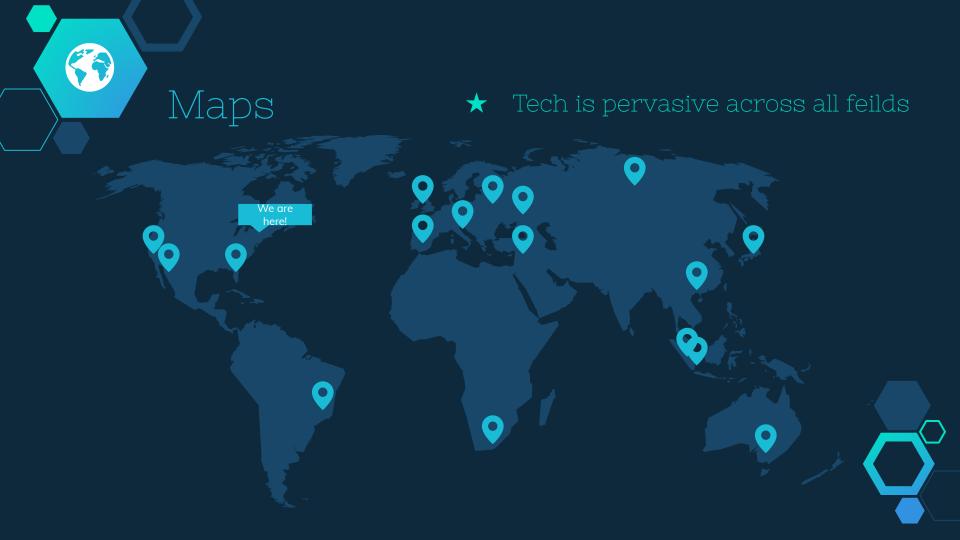
"Everybody in this country should learn how to program a computer... because it teaches you how to think"

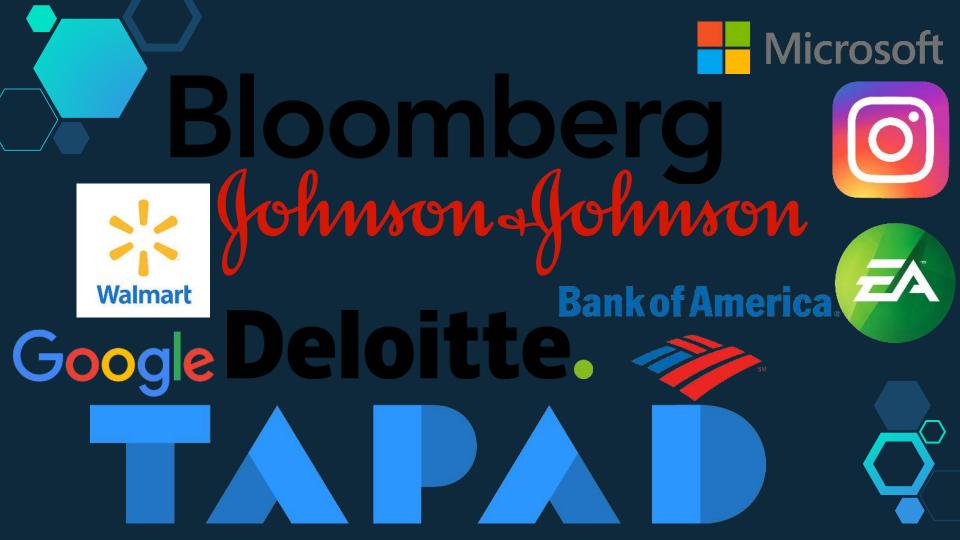
- Steve Jobs





Every Company is a Tech Company





NY Capital Region

PUBG















CS opportunities are growing!

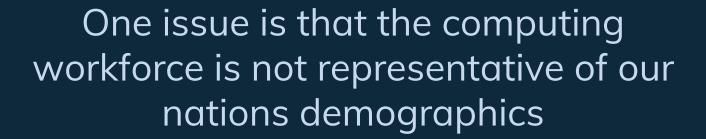
1:8

2015 CS undergraduate students to open computing jobs

1.4 million

Job openings by 2020!



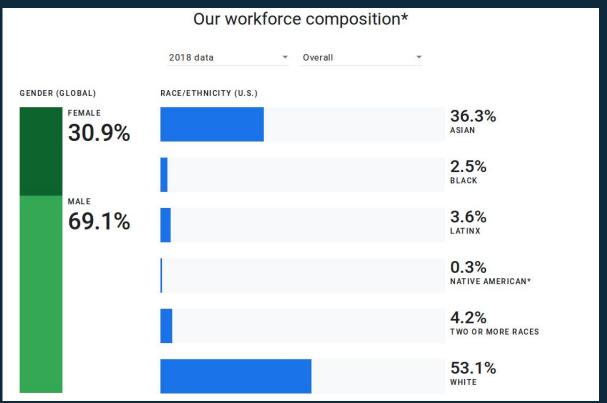


13.2%

Of our nation's population are African American, yet representation in tech is not proportional



Google Annual Diversity Report 2018 - https://diversity.google/annual-report/







How does this affect us?

Google's first voice recognition software in self driving cars didn't register women's voices

Soap dispenser not recognizing darker skin tones

Computer Vision inaccurately identifying certain demographics disproportionately

Amazon's Facial Recognition Wrongly Identifies 28 Lawmakers as people who have been arrested in the past

We need to ensure that this workforce is representative of its consumer base!



Why Diversity is Good for business/innovation

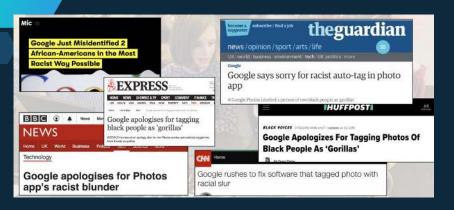
By 2045 US is predicted to be a Minority Majority country

Leaders also need acquired diversity to establish a culture in which all employees feel free to contribute ideas

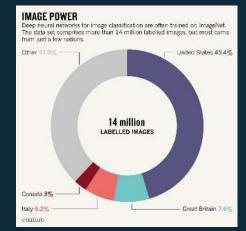
As a vital source for growth, fostering and sustaining innovation requires not only new ideas, but also increased collaboration and a culture that rewards challenging the status quo

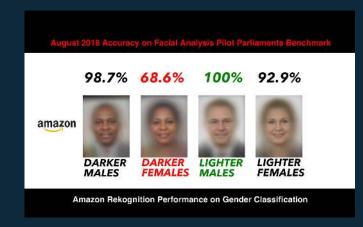
External organizations, across industries, rated highly for diversity and inclusiveness report 57% better team collaboration, 19 percent greater retention, 45 percent more likelihood of improving market share, and 70 percent more likelihood of achieving success in new markets

Ethics of AI











We have the opportunity to have such a large impact!



Tech has a Diversity Problem

- ♦ Pipeline Problem
 - Inaccessibility to CS education by certain demographics
 - Kids are being left behind!
- ♦ Poor Retention Rate
 - Imposter Syndrome
 - Insufficient Support/ Unwelcoming Culture
 - Lack of opportunities for Advancement





STEM wants you!

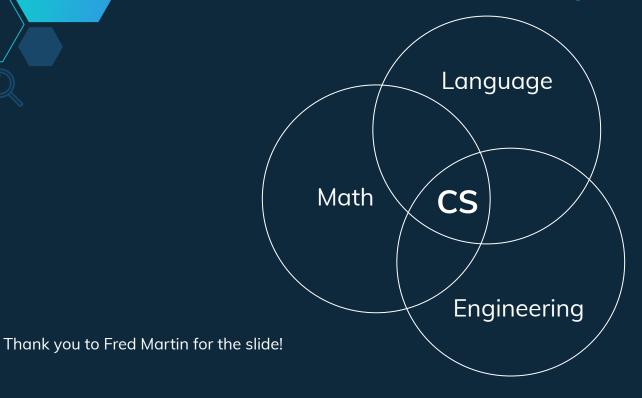
- Many tech companies are working to increasing diversity
- ♦ Foster a culture of belonging by forming professional networks/clubs
- ♦ A greater variety of perspectives collaborating on a products will help generate better, more well-rounded solutions



Anyone can learn to code with the right mindset.



What is CS really?



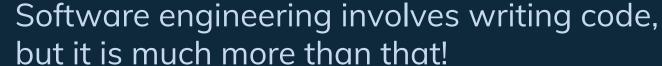




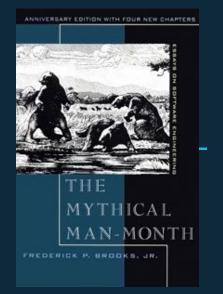
What do computer scientists *actually* do?



Software Engineer



- Building systems with many interlocking components
- Testing, documentation, team organization
- "The art of managing complexity"







Product Manager

- Guiding a product idea from design to implementation stages
- Juggling design goals, resources, deadlines.
 - Listening to project stakeholders and finding a balance between different needs.



User Experience Designer



- UX: User Experience
 - Accessibility
 - Usability
 - Learnability
- UI: User Interface
 - Designing what the product actually looks like.

Image source:

https://uxplanet.org/5-examples-of-brilliant-ux-design-8e847



More Careers

Data Scientist

Web Developer

Game Designer

IT Architect

Database Administrator

Systems Analyst

Security Analyst

Hardware Engineer

University Researcher

Industry Researcher





Thank you! Q&A



Artificial Intelligence (AI) Activity

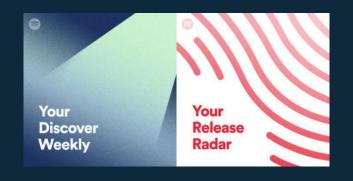


AI is Everywhere











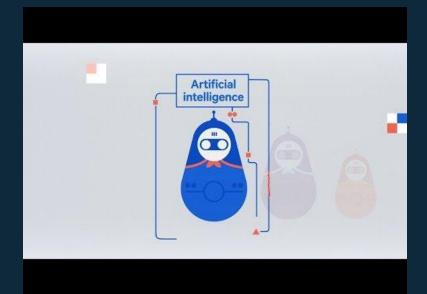




What is AI?

Artificial Intelligence:

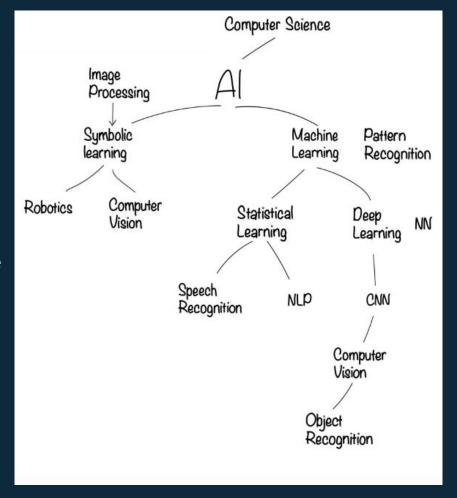
- 1. A branch of computer science dealing with the simulation of intelligent behavior in computers.
- 2. The capability of a machine to imitate intelligent human behavior.







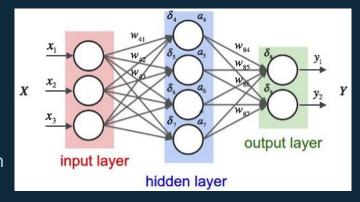
The **goal** of AI is to create systems that function intelligently and independently

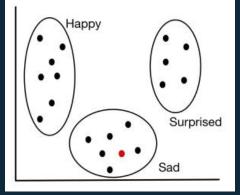




Machine Learning

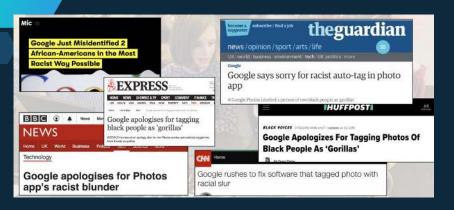
- Instead of writing a program to do a job step by step, you make a program that learns to do things itself and then train it on large amounts of data
 - Spotting patterns in massive amounts of data
 - just grouping the data based on which is most similar.
 - 20 Questions
- Steps:
 - Collect and Process Data
 - Create a Model Neural Networks
 - Train the Model
 - Improve Model



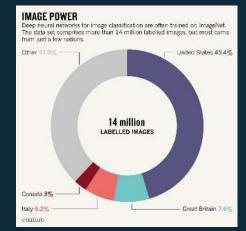


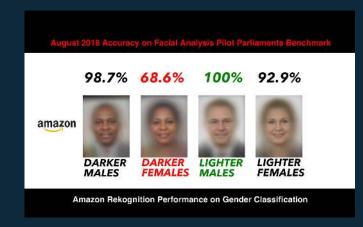


Ethics of AI



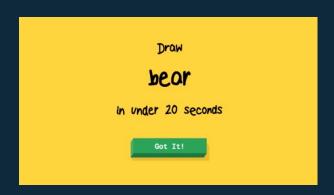






Quick Draw

This is a game built with machine learning. You draw, and a neural network tries to guess what you're drawing. Of course, it doesn't always work. But the more you play with it, the more it will learn. It's just one example of how you can use machine learning in fun ways





https://quickdraw.withgoogle.com/#



Teachable Machine





