Computer Science: Invent the Future
Change the World

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Peak to Peak High School
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Who We Are

Dola Saha
PhD Student
University of Colorado at Boulder
Interests: Wireless Networks

Joanne White
PhD Student
University of Colorado at Boulder
Interests: Crisis Informatics
Background

- Undergrad in Computer Science from India
- Liked Math and Science
- No exposure to CS in High School
- Worked 4 years in Industry
- 5th year PhD in CS at CU
- Chair of CUWIC group
- Interests: Photography, Knitting, Hiking, Skating
Research: Wireless Networks

- Faster, high-speed, seamless, cheaper wireless connectivity, which can be used in various applications
- Cognitive Radio, the radio learns where and how to transmit
Applications of Wireless Networks

AlarmNet, University of Virginia

Tele-Health Care, UC Berkeley
What is Computer Science?

- Computer Science is the study of
  - algorithms that create, describe, and transform information
  - foundations of information and computation, and practical techniques for their implementation and application in computer-based systems
- Computer Science is not just building computers or writing computer programs!

Do you see computer science in use every day?
What is Information Technology?

- Information Technology is the study, design, development, application, implementation, support or management of computer-based information systems.

- IT is using computers and computer science to:
  - Communicate
  - Solve problems
  - Design and imagine
  - Share, store, retrieve and manipulate information

Where do you see IT in use every day?
IT has changed the World
Why study Computing?

- CS/IT training can increase employment and salary opportunities within one’s field of interest
- More job openings in CS/IT-related fields than qualified graduates to fill them
- CS/IT is a financially lucrative career path
Better Opportunities

Annual STEM Job Openings vs College Graduates Through 2018

Note: The numbers are in thousands, so that’s 1.4 Million job openings.
But What Else?
IT’s Collaborative!

Meeting of a Project team, Source: Google
IT’s Creative!
CS is not just coding

Meet Leah Buechley:

Before College: Interested in art and design, liked math.

In College: Studied fine arts, then computer science.

Now: Creates clothes that light up.
The Human Genome Project and the field of bioinformatics have revolutionized what is possible in forensics, health care, science, criminal justice and other fields through the creation of the DNA database ... and it’s based on computer science!
“Find out what you love to do and do that. It’s that simple.”

- Dr. A. L. Garcia
Healthcare + CS/IT = Health/Medical Benefits

- Healthcare Informatics
- Telemedicine
- eHealth
- Medical Informatics
- Nursing Informatics
- Clinical Informatics

DNA Database Lab, Connecticut Department of Public Safety, Forensics Division
Science + CS/IT =

- Earth System Science
- Green IT
- BioInformatics
- Computational Biology
- Genome Informatics
- ChemoInformatics

Human Chromosomes, Source: National Human Genome Research Institute
Humanities/Social Science + CS/IT =

- Motion Graphic Design
- Animation (2D & 3D)
- Computer Graphics
- Computational Linguistics
- Speech Recognition Software
- Human Computer Interaction

Digital Art Collage created by students
Education + CS/IT =

- Educational Technology
- Instructional Design
- Assistive Technology
- Electronic Learning
- Distance Education
- Educational Games and Animation

Assistive speech generating devices for language and disabled learners
Business + CS/IT =

- Management Information Systems (MIS)
- Computer Information Systems (CIS)
- Database administration
- Network administration
- IT Portfolio Management
Explore your Interests. Is CS/IT for You?

- Think about your interests
- Match your interests with CS/IT
- New opportunities, new avenues, more jobs

- Health! Biology!
- Art! Music!
- Sports! Recreation!
- Health Informatics! Bioinformatics!
- Graphic Design! Audio Engineering!
- Sports / Recreation Informatics!
What’s next?

- computer science classes
- camps, clubs & competitions
- online programs & classes
- virtual www experiences
- programmable devices
Computer Science isn’t just sitting behind the desk all day, **YOU** can get out there and change the world with computing!
JO WHITE
CRISIS AND SOCIAL MEDIA
In school I hated math and science.

A journalist.

Undergrad degree in Communication, Masters in Mass Comm Research, teaching degree.

Wife and mom to four children.

Startup founder.

Blogger (mediumum.net).
Computer Science is...

- Not just about math, building machines or writing programs.
- About people, everywhere, every industry.
- In need of you.
I Do What You Do
1. Profile to memorial.
2. Virtual suicide.
3. Active engagement of social media in offline suicide.
Imagine what your future could look like in computing

Visit:
http://computingcareers.acm.org

Check out the student resources at:
www.csedweek.org/audience/students

Information Technology in Industry:
http://www.youtube.com/watch?v=YgWnhS5WyfM

See how’s life like at:
http://www.youtube.com/lifeatgoogle
Questions?

Feel free to contact us:

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