Computer Science: Invent the Future Change the World

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Peak to Peak High School
18th February, 2011

Who We Are

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

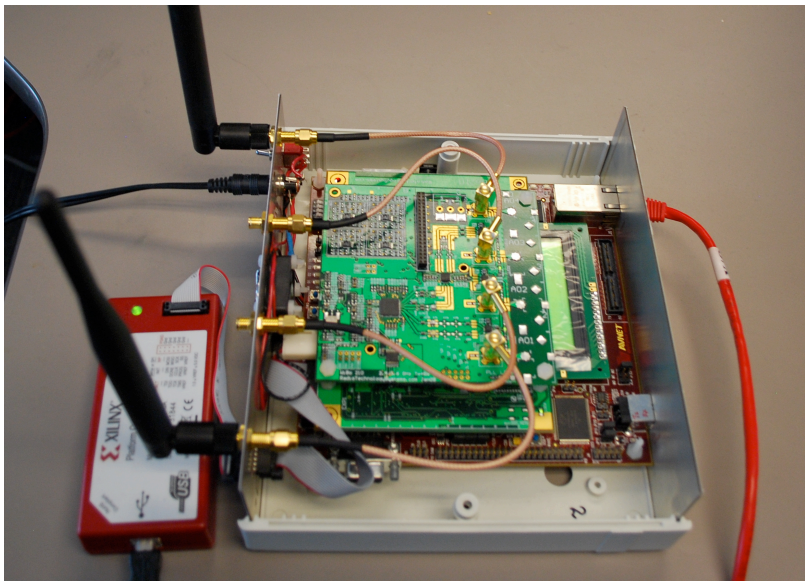
Joanne White
PhD Student
University of Colorado at Boulder
Interests: Crisis Informatics

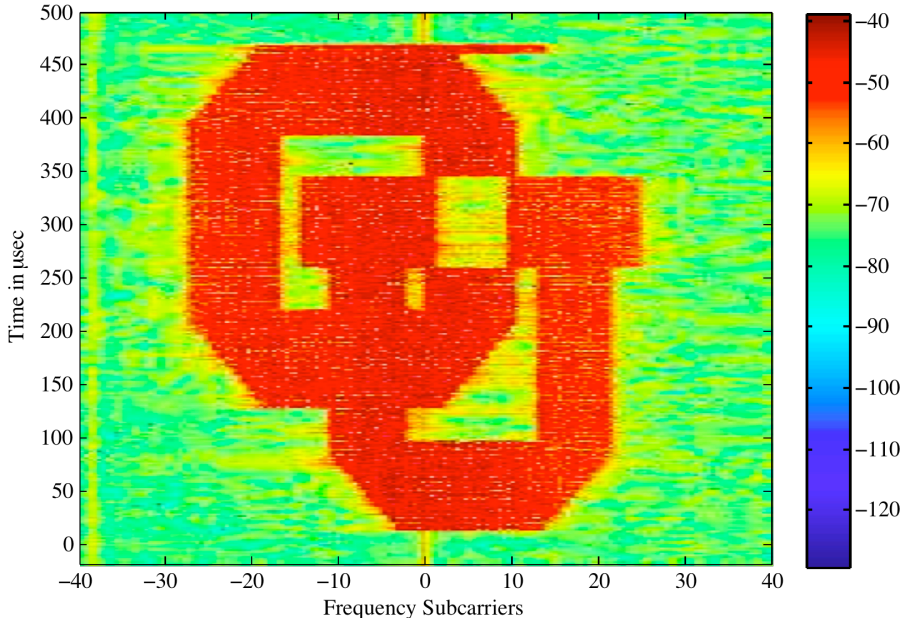
Background

- 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

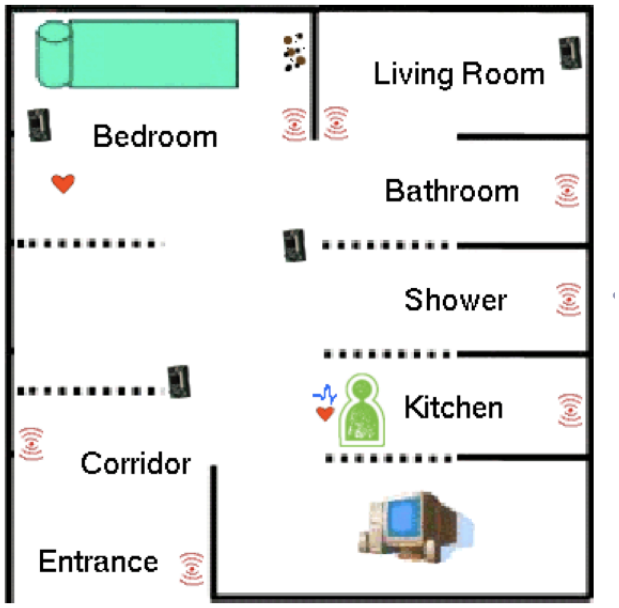
Research: Wireless Networks

- 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

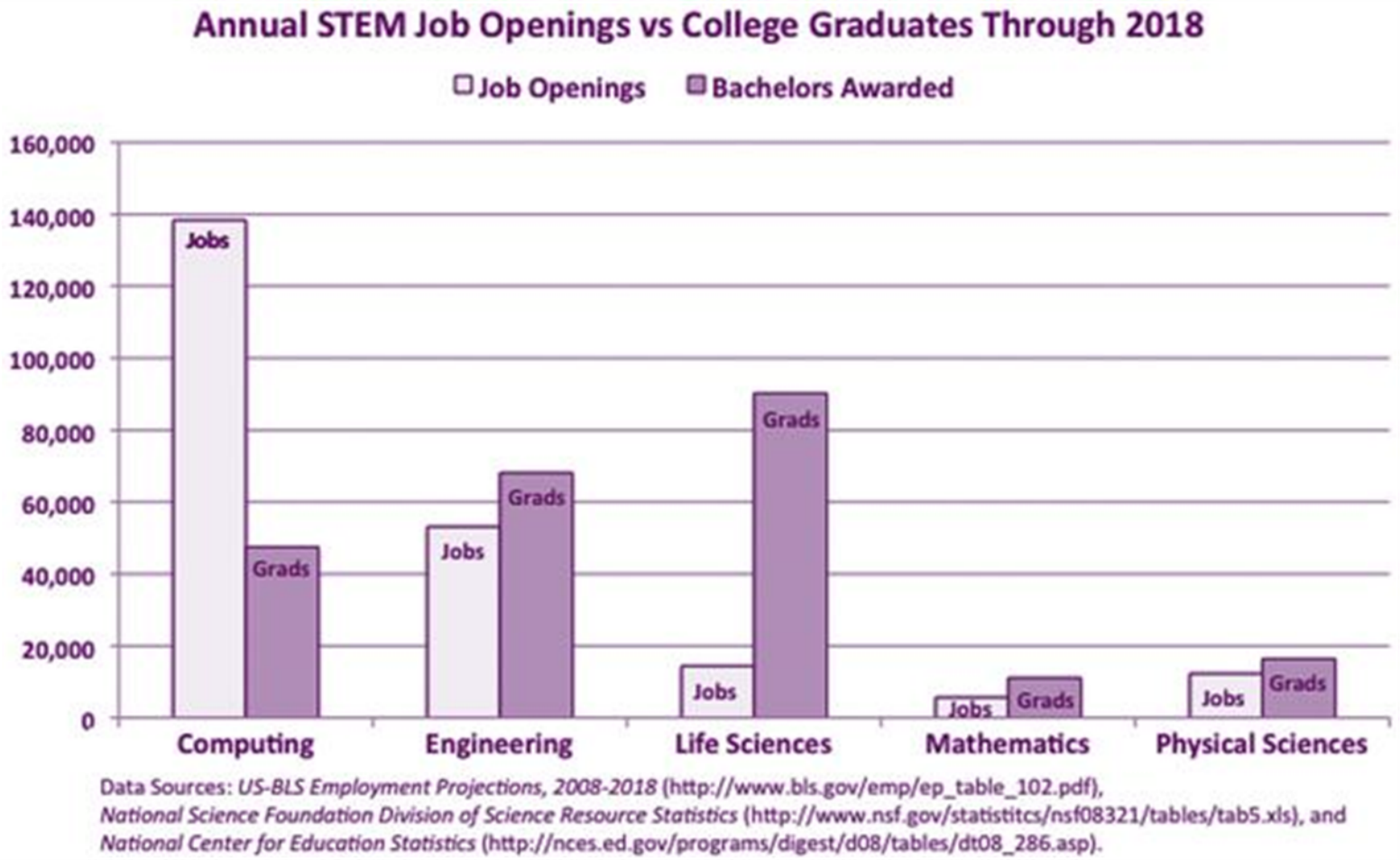
Where do you see IT in use every day?

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

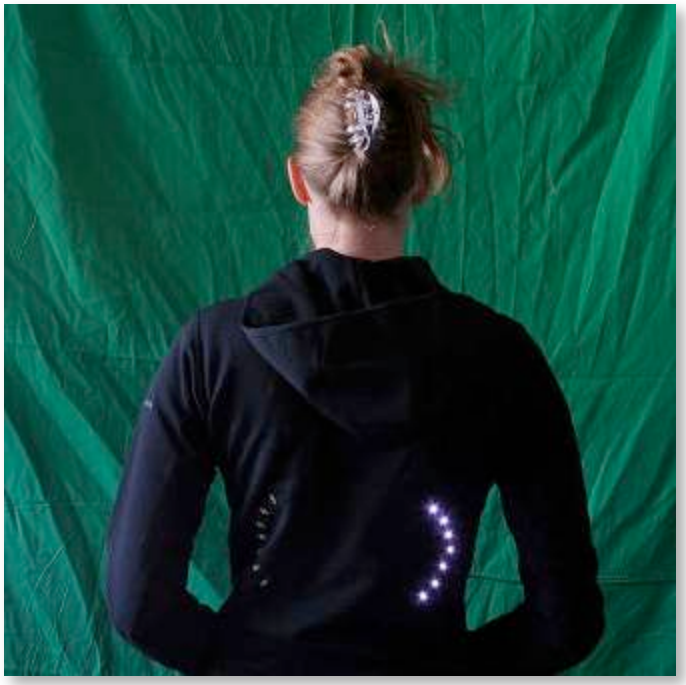


Note: The numbers are in thousands, so that's 1.4 Million job openings.

But What Else?
IT's Collaborative!

Meeting of a Project team, Source: Google

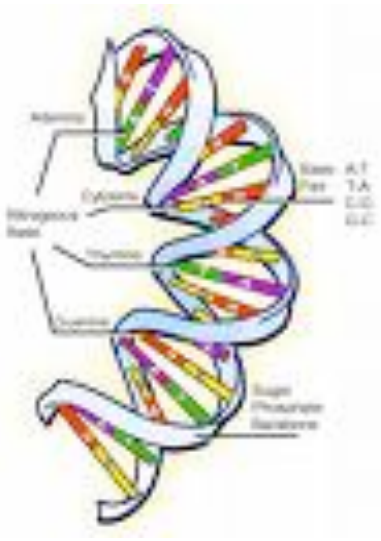
IT's Creative!
CS is not just coding



- 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.

IT Benefits Society

- 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!**



DNA Database Lab, Connecticut Department of Public Safety, Forensics Division

Student Interests + CS/IT = Innovative Careers

"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

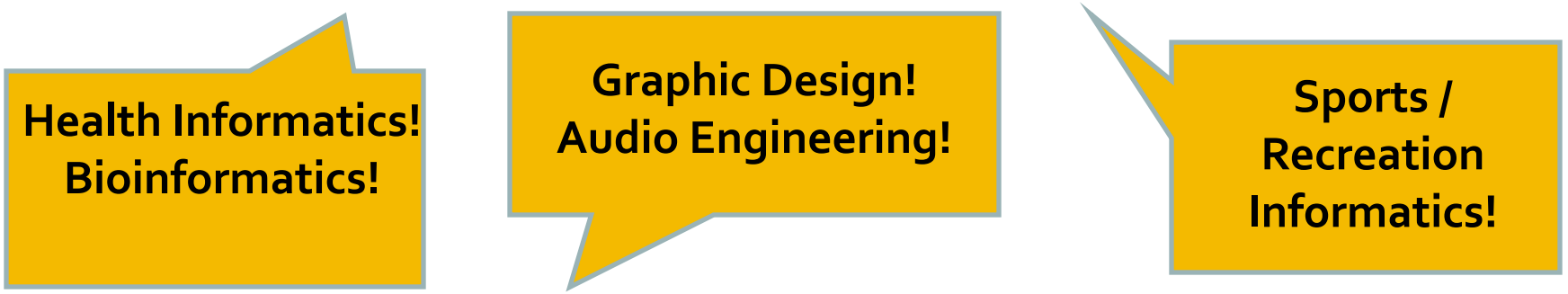
Business + CS/IT =

- 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

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!

University of Colorado at Boulder
ATLAS INSTITUTE

JO WHITE
CRISIS AND SOCIAL MEDIA

Who Am I?

- 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 (mediamum.net).

Computer Science is…

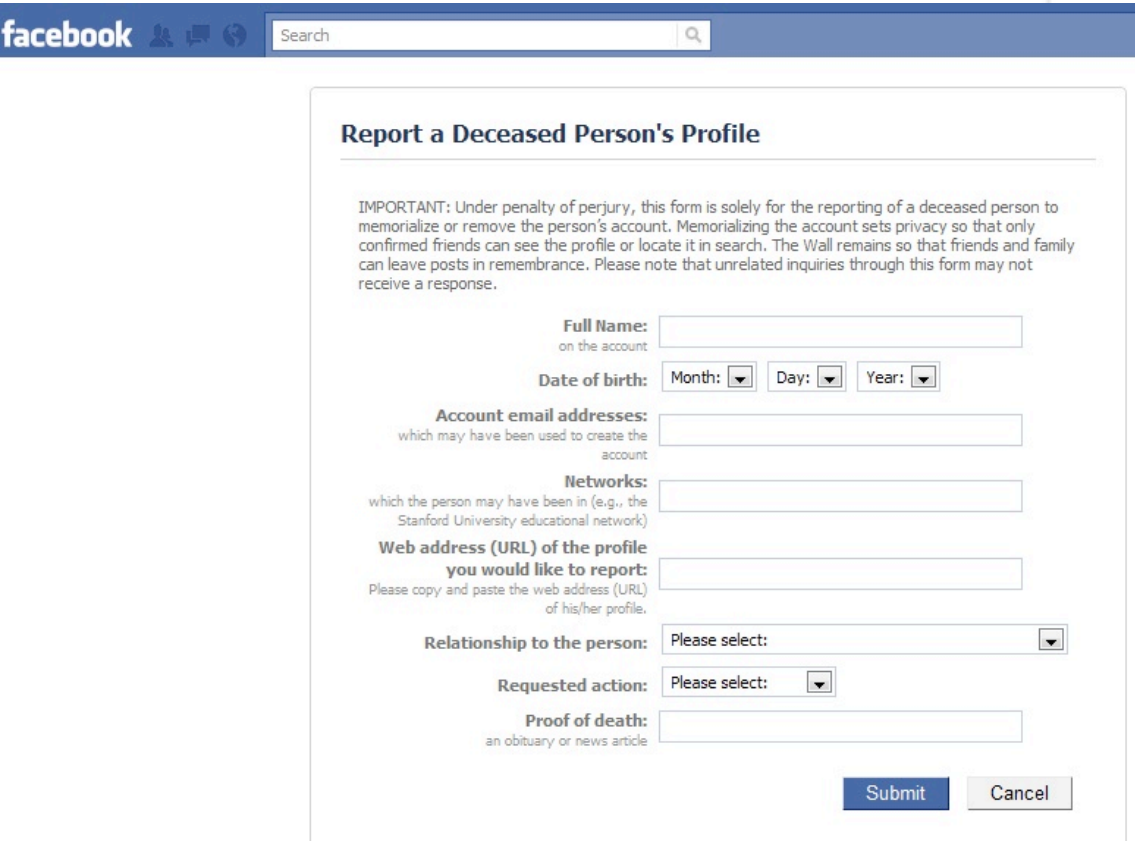
- Not just about math, building machines or writing programs.
- About people, everywhere, every industry.
- In need of you.

I Do What You Do

Project EPIC

My Dissertation Research: Death and Social Media

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?

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