Computer Science @ UMass

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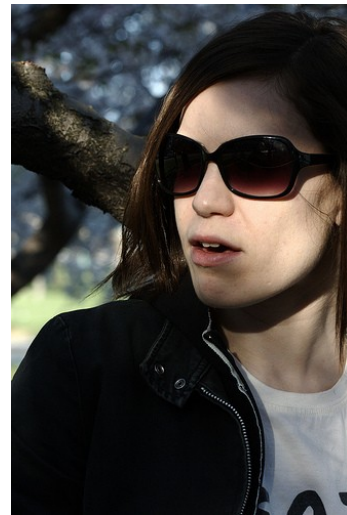
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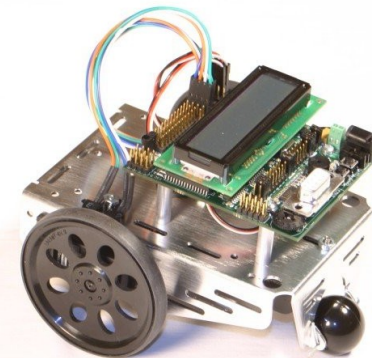
Computer Scientists?
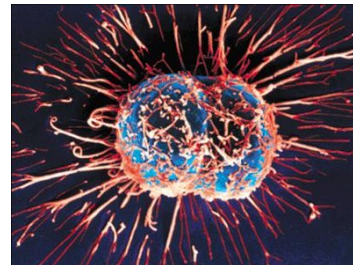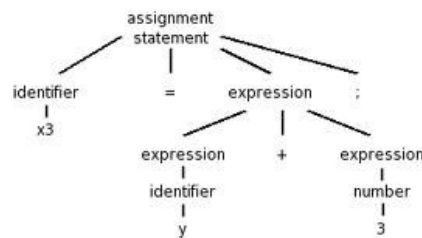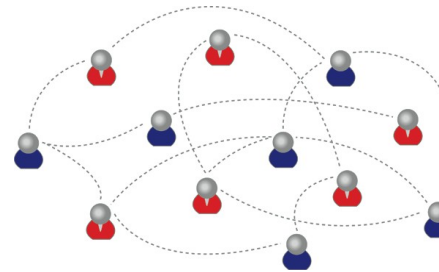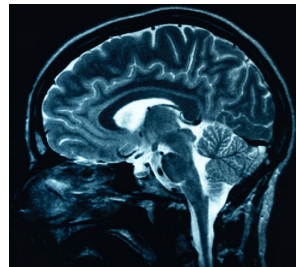
Computer Scientists!

Computer Science?

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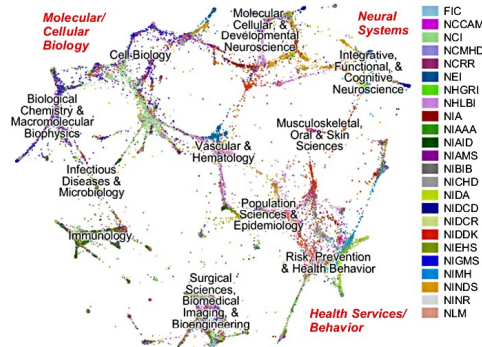
Life as a Computer Scientist

- Not just programming
- CS skills are an advantage in any field
- Think logically, analyze critical issues, model complex systems, solve real-world problems
- Wide variety of jobs with high starting salaries

Some Options

If That Wasn't Enough...

Northrup Grumman, BAE Systems, Sonalyst, TNR Global, US Dept. Transportation at the Volpe Center, Dexrex, Galatea Associates, Ernst & Young, Biogen Idec, Hitachi Data Systems, SCVNGR, Washington Post Digital, Rediker Software, MIT Lincoln Laboratory, Boeing, General Electric, General Dynamics, Bosch, ...

... and many, many graduate schools!

Let's Talk About Money...

- Money Magazine's Best Jobs in America 2011:

    - #1: Software Developer

    - #7: IT Consultant

- Bureau of Labor Statistics annual salaries:

    - Computer/Information Research Scientists: $103,150

    - Computer Programmers: $74,900

    - Software Developers (average): $94,185

Why CS @ UMass?

- CS dept. is ranked in the top 25 in the country

- Over 40 tenure-track professors teach and run research labs

- Research opportunities for top undergraduates

- Social: ~350 UG (20,540 UG total) and ~200 G

Degree Tracks: Computer Science

- BS in computer science:

  – Flexible degree: 10 focus "tracks"

  – Software Engineering, Security & Privacy, Robotics, Artificial Intelligence, Networking, Theory, …

- BA in computer science

- Minor in computer science (major in another field)

BS Requirements

- Two intro. classes (problem solving, data structures)

- Four math classes (calculus, algebra, statistics)

- Four core CS classes

- Two science classes with labs

- Junior year writing class

- Eight CS electives (300-level or higher)

Ten "Tracks"

- Software engineering

- Security and privacy

- Networking

- Robotics, vision, and computer graphics

- Artificial Intelligence

- Computer Architecture

- Programming languages and compilers

- Software Systems

- Theory of computation

- Search and data mining

Sample Schedule

- **Year 1:** problem solving, calculus 1, science 1; data structures, calculus 2, science 2

- **Year 2:** pre-software engineering, pre-algorithms; pre-artificial intelligence, elective, statistics

- **Year 3:** algorithms, pre-operating systems; writing, artificial intelligence, linear algebra

- **Year 4:** operating systems, CS elective x 4

BA Requirements

- Two intro. classes (problem solving, data structures)
- Three math classes (instead of four)
- Three core CS classes (instead of four)
- Five CS electives (instead of eight)
- Four classes (300-level or above) in another department
- "One" foreign language for most students

Financial Assistance

- Financial aid: last year 18,000 students received over $230m

- Massachusetts Aspirations in Computing Award for women

- Bay State Fellowship program: good students can do a tuition-free masters degree

Admission

- Only requirement: pre-calculus class

- **NO** prior programming experience required (e.g., high school AP courses in computer science)

- Immediate admission for top students

- For others, the department will review applicants' courses and set specific admissions goals

How to Prepare...

- Study mathematics!

- Advance your expertise in other areas of interest (e.g., biology, politics, sociology, art, ...)

- Visit the department

- Don't compare yourself to others – we want all kinds of computer scientists!

Thanks!
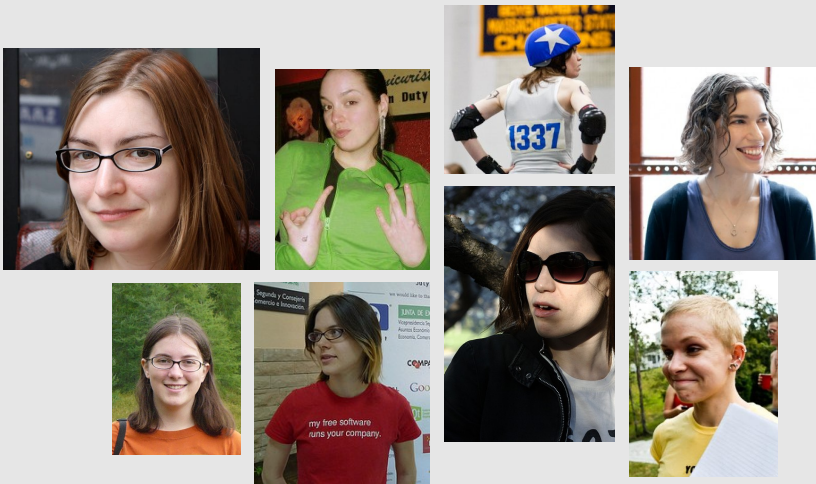
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