COMP 250

Lecture 35

Graduate school ?

Dec 2, 2016

Talk Overview

1) why get a graduate degree (in CS) ?

2) my experience and biases

3) research life

4) MSc vs. PhD,   Canada vs. US

5) preparations

Why get a graduate degree?

1) increase your breadth or depth

    ugrad courses   vs.   grad courses

Why get a graduate degree?

2) fun, interest

Why get a graduate degree?

3) to learn what research is about

... and perhaps have a research career.

My Experiences (and biases)

School

BSc McGill 1986 (Major Math, Minor CS)

U2 and U3 summers in neuroscience research lab

MSc in Computer Science at University of Toronto 1988

[break in France,   undergraduate physics courses 1989]

PhD at McGill (computer vision) in ECE 1995

Work

Postdoctoral Researcher at industry lab in USA (NEC)
Computer vision
1995-1998

Postdoctoral Research at a Max Planck Institute in Germany
Experimental Psychology (visual perception)
1999-2000

Professor at McGill   2000-present

Job of a professor

- Research
- Teaching
- Administration

Job of a professor

- Research
- Teaching
- Administration

Why do we do it?   Because…

- it is fun & satisfying   (?)

Job of a professor

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- Teaching
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Why do we do it?   Because…

- we can make an impact   (?)

Job of a professor

- Research
- Teaching
- Administration

Why do we do it?   Because…

- we want to be famous (?)
  … more about that a few slides from now

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Research Life

Small community

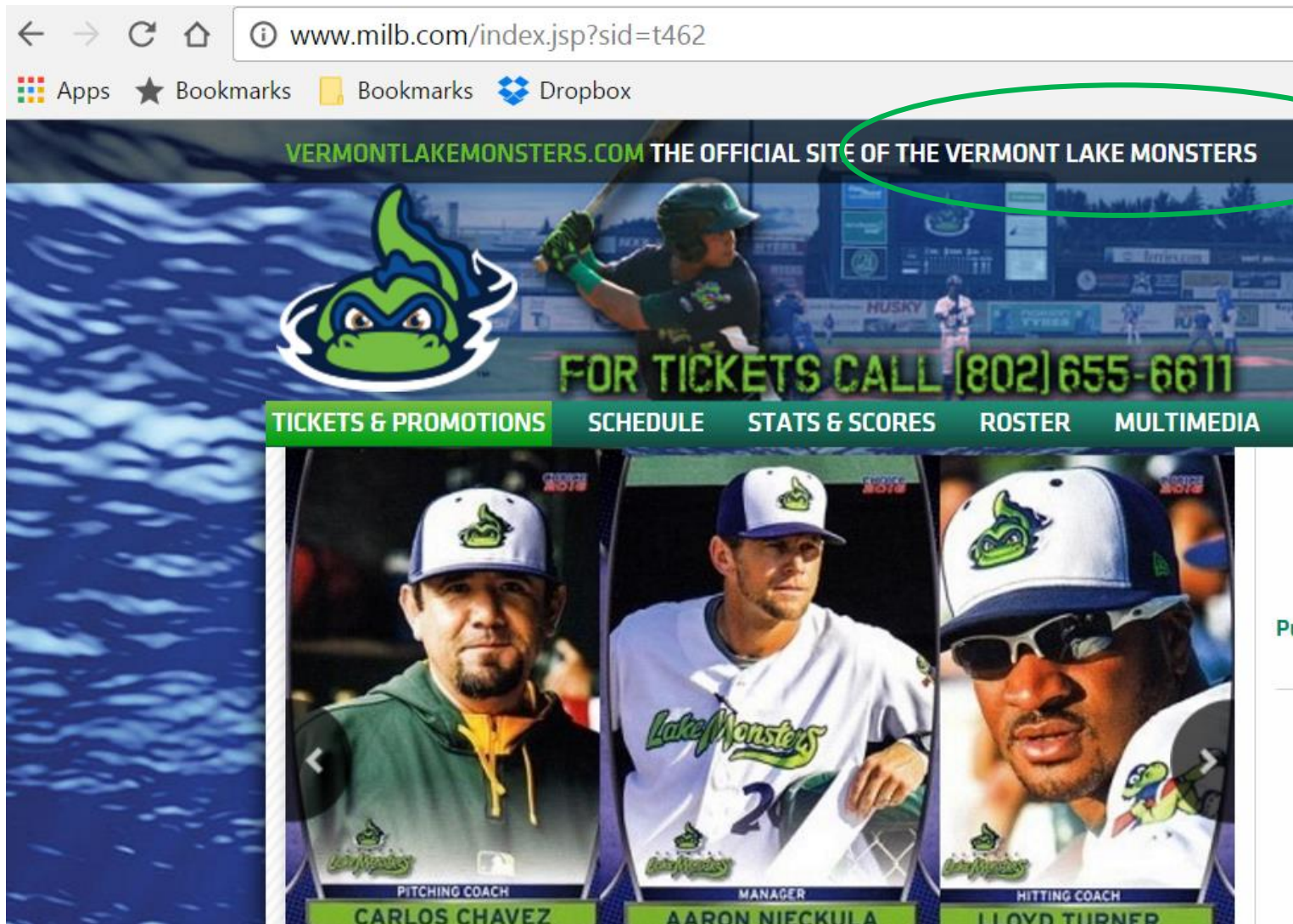# Research Life

You are identified with your work.   Fame….

e.g.   Dijkstra's algorithm for shortest paths.
       (Newton, Euler, Riemann, Maxwell, …..)

Some do it for fame.

But most do it for the love of the game.

Research Life

WARNING: Research is challenging.   Progress is slow.

"Publish or Perish"

- Baseball analogy: MLB vs. class A

- Conferences
  (acceptance rates, reviews, locations, …)

- When did I start publishing ?

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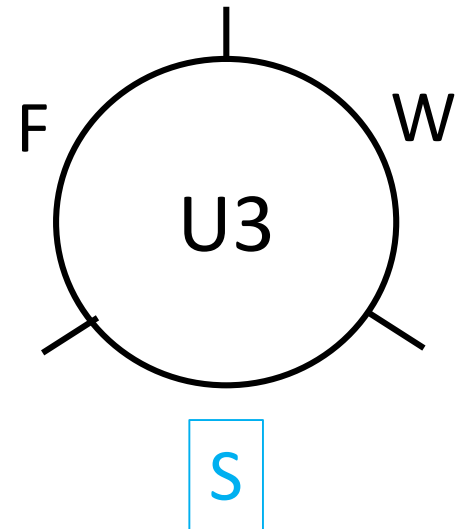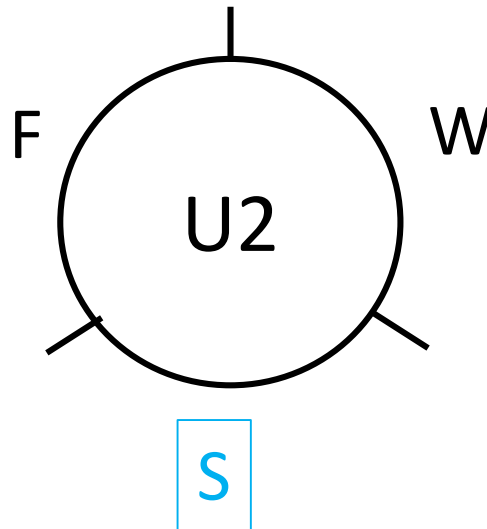
5) preparations

BA / BSc / BEng
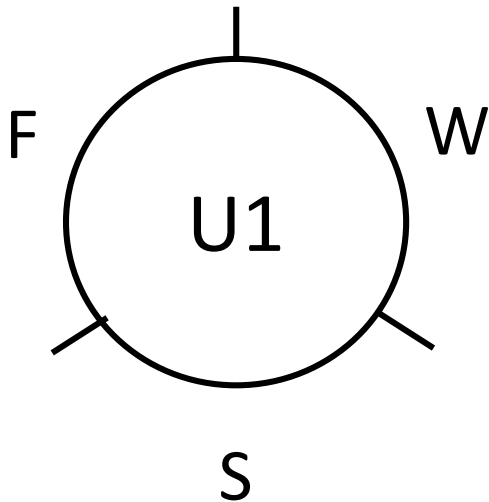
MSc   - - - - - ->   PhD

NO research
experience
necessary to get in

SOLID research
experience
necessary to get in

Preparation for Grad School
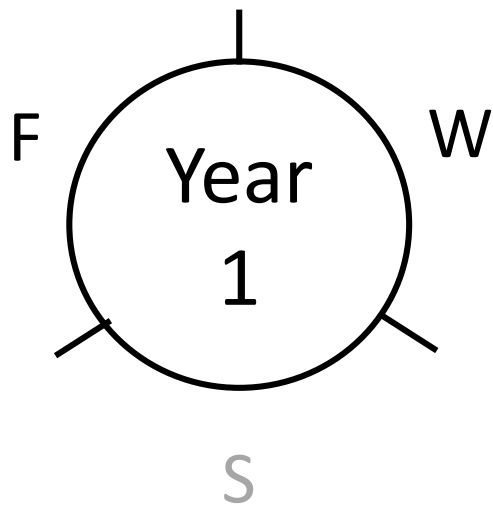
- Get involved in research…

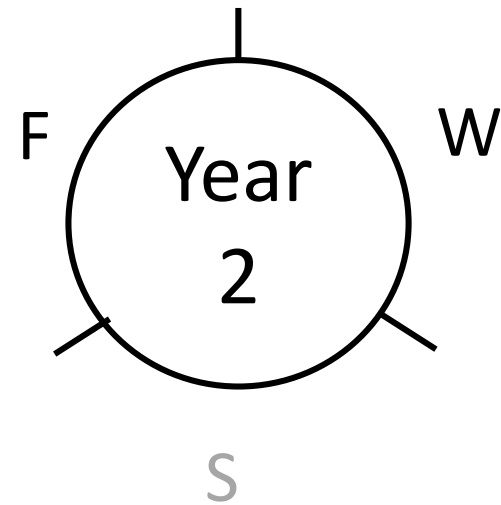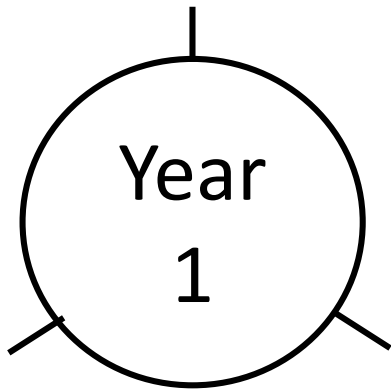NSERC USRA,   SURA,   COMP 396, 400

MSc in Computer Science

courses   research
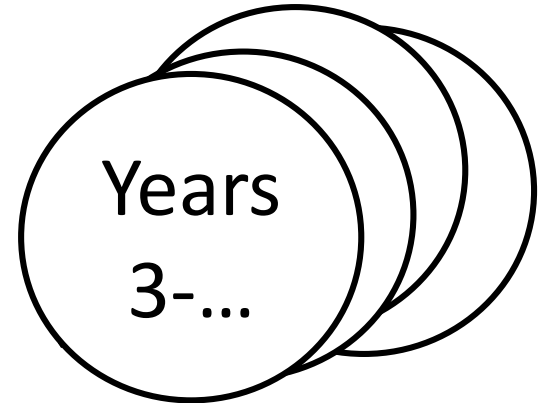
PhD

Year 1 — courses + exam
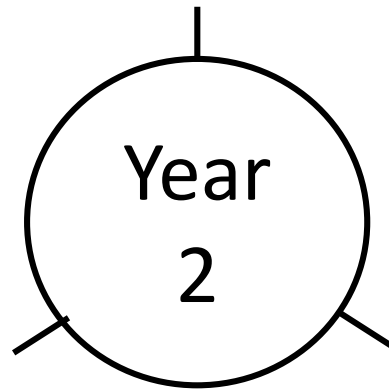
Year 2 — research proposal

Years 3-... — research

Ph.D. at a top ranked school

Advantages

- excellence is the norm

- CV

Disadvantages

- busy supervisor

- pressure cooker

- imposter syndrome

- graduate student status
  < undergraduate status

An Ivy League prof I know said he felt like this:

Funding

MSc in Canada

- NSERC, FQRNT
- department fellowship
- supervisor research grant
- TA ship

PhD

- 3 years guaranteed

  (basic cost of living)

Choosing a PhD supervisor

Huge.

Meet the person before committing.

Visit school and speak with other students.

Read person's papers.

For more information…

http://www.cim.mcgill.ca/~langer/resources-gradschool.html

Resources for Undergraduate Students considering Graduate School

- SOCS Undergraduates (last updated Apr. 2012)

- Applying to Ph.D. programs in computer science, by Prof. Mor Harchol-Balter, Carnegie Melon University (2011)

- Advice for profs writing letters of recommendation , by Prof. Shriram Krishnamurthi Brown University (2008)

- Ph.D. Comics

Monday – last 'lecture'

- beyond COMP 250 (courses & programs)

- final exam

- …   TBD

Please do Course Evaluations for all courses.