

# Graduate School

## What I Wish I Knew in Third Year

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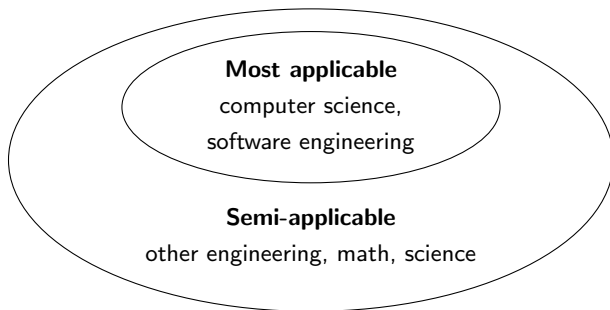
Bachelor Software Engineering, 2014

MMath Candidate in Computer Science

September 18, 2014

# What This Presentation Is About

- ▶ What I wish I knew in third year
- ▶ What I learned since third year



# My Experiences

Research experiences:

- ▶ Undergrad: Co-op, URA, FYDP
- ▶ Now a graduate student in computer science



# My Experiences

Industry experiences:

- ▶ Telecommunications, web development startup
- ▶ Most recently: Visual C++ compiler at Microsoft



# Course-based Degree

- ▶ Pay tuition and take courses (consume knowledge)
- ▶ Examples: law school, med school, MBA, MMath, MEng

# Research-based Degree

- ▶ Paid to do research (produce new knowledge)
- ▶ Examples: MMath, MASc, PhD
- ▶ See also [Matt Might's illustrated guide to a Ph.D.](#)

After this point, “graduate school” refers to **research**.

# Reasons for Graduate School

Philip Guo offers three practical reasons:

- ▶ Make a name for yourself
- ▶ Fail in a safe environment
- ▶ Choose from more jobs

In other words, “trade money for freedom.”

# Make a Name for Yourself

- ▶ Formulate, execute, and sell your ideas
- ▶ Entire process from start to finish, on your own



# Fail in a Safe Environment

- ▶ Failure is an opportunity for growth
- ▶ Failure can inspire grit, tenacity, and perseverance
- ▶ Expected to fail repeatedly, without hurting career

# Choose From More Jobs

- ▶ Co-op experiences makes us very employable at graduation
- ▶ A PhD can open even more opportunities
  - ▶ Corporate research, academic research, teaching

Trade money for freedom.

# Reasons Against Graduate School

You might not want to consider graduate school if you:

- ▶ like working in industry
- ▶ find it important to make a good salary now

Graduate school might not result in a higher salary later, either.

# Job Application for a Research Position

- ▶ Apply 1 year before expected start
- ▶ Publications (research experience)
- ▶ Potential (to do research)
- ▶ Other qualities:
  - ▶ Perseverance, tenacity, cogency

# Research Experience

- ▶ Work with different professors
- ▶ Opportunities:
  - ▶ Co-op, URA, FYDP, SE 499

# Letters of Recommendation

- ▶ Need 2–3 letters
- ▶ Strong, academic references
  - ▶ Professor you've done research with
- ▶ “Course” letter
  - ▶ Professor whose course you excelled in
- ▶ Industry letter
  - ▶ Demonstrated qualities appropriate for research
  - ▶ Some programs won't accept these letters

# Personal Statement

- ▶ Convince admissions committee that you are a strong candidate
- ▶ Describe your research experience and interests

# Other Application Materials

- ▶ Resume
- ▶ Grades
  - ▶ May or may not be a cutoff
- ▶ Graduate Record Examinations (GREs)
  - ▶ Standardized test (similar to SATs)
  - ▶ For US schools



# Summary

- ▶ What is graduate school?
  - ▶ A job to do research: produce new knowledge
- ▶ Reasons for graduate school?
  - ▶ Make a name for yourself, fail in a safe environment, choose from more jobs
- ▶ How to apply to graduate school?
  - ▶ Get research experience, which gets you essay material and letters

# Further Reading

- ▶ Applying to Ph.D. Programs in Computer Science
- ▶ *The Ph.D. Grind*
- ▶ Matt Might's blog
- ▶ Philip Guo's articles