

Graduate School

What I Wish I Knew in 3A

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Outline

- 1 Introduction
- 2 Explaining Graduate School
- 3 Reasons for Graduate School
- 4 Applying to Graduate School
- 5 Summary

What This Presentation Is About

- What I wish I knew in 3A
- What I learned since 3A
- For computer science and software engineering students
 - Somewhat applicable for math, science, and engineering
 - Probably less helpful for other fields

My Experiences

- 4B Software Engineering, class of 2014
- Research experiences
 - Co-op, URA, FYDP
 - Applied to graduate schools in Canada and USA
- Industry experiences
 - Telecommunications, web development startup
 - Most recently: Visual C++ compiler at Microsoft

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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
- [Matt Might's illustrated guide to a Ph.D.](#)

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

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Reasons for Graduate School

From Philip Guo: trade money for freedom

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

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

Reasons Against Graduate School

- Like working in industry
- Lower salary
- Might not increase starting salary in industry

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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 universities 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

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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?
 - Get research experience, which gets you essay material and letters

Further Reading

- Matt Might's blog
- Philip Guo's articles
- *The Ph.D. Grind*