

Graduate School

What I Wish I Knew in Third Year

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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, Capstone, 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](#)