Higher Studies and Research

@Daffodil International University, Software Engineering Club

Introducing myself - 1/2

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Introducing myself - 2/2

Ph.D Candidate,

Advised by

Dr. Denys Poshyvanyk (Software Engineering
Maintenance and Evolution Research Unit -
SEMERU)

&

Dr. Adwait Nadkarni (Secure Platforms Lab - SPL)
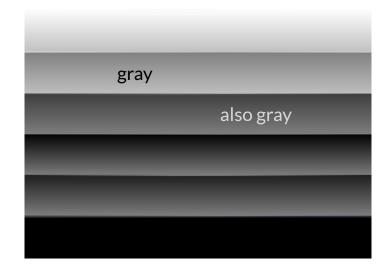
More info: https://amitsealami.com

Context: 1st Factor

"Academia / research lives, breathes and evolves

Therefore, many choices between black and white.

Just like life."

- Some wise guy
- (me)

gray

also gray

Context: 2nd Factor

Reusing the Wheel

Notably,

- "How to navigate graduate school toward a rewarding Ph.D" in ICSE 2019 Student Mentoring Workshop
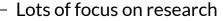
by Dr. Denys Poshyvanyk

Why Higher Studies (in USA)?

- learn about the latest and greatest practices
    - from industry and academic experts
- fulfill your ambitions
- get paid!

Typical Lifecycle in Masters/PhD

In years:

1. Coursework
2. Candidacy (/Masters)
3. Forming Proposal, Research, Write, Publish
4. Finalizing Proposal, Research, Write, Publish
5. Research, Write, Publish, Dissertation

Lots of focus on research

Graduate Schools

Want to have students with

- Prior research experience, contribution, publication
- Creativity, responsibility, persistency
- Independency and Leadership
- Academic Choices and Performance

Preparing for Admission (As Student)

- Choose your courses wisely
- Do well in classes
- Know your faculties
- Try to get involved in research

Application Components

- Statement of Purpose (SOP)
- Letter of Recommendation (LoRs)
- GRE
- IELTS/TOEFL
- Undergrad transcripts

SOP - 1/2

- Focus on your own story
    - Experience with research / research interest
    - ideas about existing problems
    - Personal interest to professors in that department and why
    - Get feedback from others (specially faculties/peers)

SOP - 2/2

- never, ever, ever start by looking at SOPs written by others
- Follow guidelines
    - MIT, Berkeley

Good to read:

- How to Write a Bad Statement for a Computer Science Ph.D. Admissions Application

LoR

- 3-4 letters
- Make the letter personal
    - অমিম একটি ভালো শিক্ষার্থী
    - অমিম ভালো শিক্ষার্থী, আমি আর অমিম মিলে এই গবেষণা / প্রোজেক্ট করেছি যেটায় অমিম ওরকম সেরকম কাজ করেছে বলে গবেষণার মান বৃদ্ধি পেয়েছে।
- Preferably from supervisors who supervised your work
- Internship/industry supervisor LoR are also fine, but it has to be relatable

GRE

- required?
- range?
- quant score (probably) gets more weight

Factors to Consider when Applying - 1/2

- Specific Ranking (professor, department, field)
- Potential Supervisor
    - Beginner vs Experienced
    - Research Group
    - Publications
    - Alumni members

Factors to Consider when Applying - 2/2

- Requirements of PhD program
- Location
- Financial Support
- Bangladeshi community

Applying

Personal rule of thumb: If you are going for 10 schools

- 2 top tier
- 4 okay
- 4 safe

Potential Research Works - 1/2

- Find a supervisor with research experience / interest
- Maybe start with reading / doing Literature Survey
- Extension on existing works

Potential Research Works - 2/2

- Adding localized context/factor to existing works ([MobiCoMonkey](#))
- Reading about latest and greatest experimental works (e.g. ICSE [NIER](#))
- [Seminal Works in SE by CMU](#)

Good to read

- [What Makes Good Research in Software Engineering?](#)
- [https://www.slideshare.net/alexorso/how-to-get-my-paper-accepted-at-top-software-engineering-conferences](#)

Publication

- Avoid predatory journals
- Go for reputed conferences / journals
- Avoid plagiarism
- Focus on quality contribution, not for namesake

While studying, try to gain

- Independency
- Critical Thinking
    - **_Why_** of phenomenon
    - **_What if_** of phenomenon

Reaching out to Professors

Email

- Write a draft, check with your supervisor
- Focus on demonstrating your understanding

Totally random example:

- স্যার, আপনার ম্যালওয়্যার এনালাইসিসটা ভালো লেগেছে
- স্যার, বায়েসিয়ান ক্লাসিফাইয়ার বেসড ম্যালওয়্যার ডিটেকটরটা অনেক ভালো লেগেছে। আমার মনে হয় বায়েসিয়ানের বদলে এন-গ্রাম ব্যবহার করলে এপিআই পর্যায়ে ডিটেকটরটা আরো ভালো কাজ করবে, কারণ ...

Reaching out to Professors

Other ways:

- Twitter
- ResearchGate (!)

Summary

- Learn as much as possible about research
- Explore opportunities
- Read. A LOT (https://paperswelove.org/)
- Try to understand what if and why
- Think crazy, think out of the box
- Have fun while doing it

Q&A

Feel free to ask me anything.

Reach me through https://amitsealami.com

Twitter: AmitSealAmi