

NSL



Learning and Earning a PhD

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Radha Poovendran

Network Security Lab

Electrical Engineering Department

University of Washington, Seattle, WA

<http://www.ee.washington.edu/research/nsl>

Outline

- **Getting a PhD**
- **Problem**
- **Problem->Solution**
- **Solution->Paper**
- **Paper->Presentation**

Getting a PhD

- **Why do a PhD?**
 - You enjoy research and want to follow a career in research and teaching
- **No need to have PhD to find a job**
 - MS is enough for a lot of project jobs
- **Anything else?**

Problem

- Pick a problem that is relevant and **excites you**
- Read the best papers in the field
- Problem must keep you occupied
- Set up the problem with your own taste and angle of attack
 - You can summarize your result to someone in an elevator

Problem

- **Pick a simple version of the problem**
- **Understand the basic problem well**
- **Add complexity/constraints/features to the problem one at a time.**
- **Generalize the problem as much as you can for theory and practicality**

Problem-Solving

- Focus on the problem-**NOT ON TOOLS**
- Develop insights into the problem
- Develop “clean” or elegant solutions
- Develop general frameworks
- Learn to enjoy the process of knowing the problem (**Takes time**)

Solution-Paper

- Read high quality examples to learn the process of writing
- Learn to write short and effective summaries of the papers you read
- Learn to write short summaries of your work and get feedback to improve
- Write directly and simply

Paper-Presentation

- **Motivate your problem**
- **State or formulate the problem**
- **Explain the insight that makes the solution feasible**
- **Show your approach in steps**
- **Support with experiments/data**
- **Enjoy the process of giving talks**

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