The CSE Ph.D. program at the University of Michigan

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PhD Goals

1. Meaningfully extend the body of knowledge in Computer Science & Engineering via original research

2. Become the world’s foremost expert in the narrow topic of your dissertation

3. Enter as a student; leave as a colleague

**The big challenge:** you are now working on problems whose answer nobody knows!
Timeline (w/o incoming MS)

• 1st year: Coursework/research – choose an adviser early
• 1st summer – research on campus
• 2nd year: light coursework and mostly research

• **Qualification**: Research presentation (a.k.a qualifying exam) + coursework (1.5~2 yrs)

• More research (2-3 years)

• **Proposal** – 60-80% of the work is done. You have a story for your thesis

• About 1 year later: **Defense/thesis filing**
Prelim Exam

• Must present original research project to faculty panel
  – 3 faculty selected by grad committee (who are not involved in the research)
  – Directed study report
  – ~40 minute presentation
  – ~40 minute Q&A
• Deadline
  • Joined program w/o MS: 4 semesters
  • Already have an MS: 3 semesters
Choosing an advisor

• Earlier is better

• Explore interesting faculty at CSE
  – Visit faculty pages
  – Read their research papers/presentations
  – Work with them on graduate course projects
  – Make contact

• Work on a mutually interesting research topic
  – Professors typically cover broad areas under their research umbrella
Goals and advice

1. Hardware courses first – preliminary research experience

2. Start early on research – that’s your critical path to graduation

3. Collaborate – with your personal goals in mind

4. YOUR Ph.D. – goal: advance the field in your area of expertise

5. Research direction – Flexible at start; focused towards the end

6. Constant progress (even if little) is essential
PhD Coursework

• Breadth Coursework
  – 3 courses in 3 different areas (HW, SW, Intel Sys, Theory)
  – B+ or better
• Depth Coursework
  – Any 2 courses on Depth list; at least 1 must be “starred”
  – A- or better
• Rackham Cognate (4 grad credits outside CSE)
• Some more credits, including some independent study

COURSEWORK IS NEVER THE CRITICAL PATH TO GRADUATION!
Who to talk to?

1. Academic Advisor
   - Assigned when you arrive
   - Initial point of contact for selecting courses

2. Research Advisor
   - Selected by mutual consent within 1st year
   - Guides directed study, dissertation research

3. Ashley Andreae/ Grad Program Committee Chair
   - Administrative matters; confirming you are following rules
   - Petitions, concerns, questions about degree program
QUESTIONS?