# How to Succeed in Graduate Studies at UMBC CSEE

## Tim Finin

## Computer Science and Electrical Engineering University of Maryland, Baltimore County

Adapted from presentations by Professor Marie desJardins and others

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## What we'll cover

- Graduate lifecycles
- UMBC resources
- An illustrated guide to a graduate degree

# Lifecycle of an MS Student

- Take courses
  - Talk to your advisor (there for a purpose!) and ask other students as well
  - Take 2-3 courses/semester if supported
  - Can transfer some graduate credits, but ...
- Internship: apply Nov-May for summer
- Thesis or project research
  - Thesis: six credits, typically over two semesters
  - Project: three credits in one semester (+ one more course)
  - Thesis vs. project considerations
  - Write and publish research paper
- Apply to Ph.D. program or interview and get job



# Lifecycle of a Ph.D. student

- Take courses and find an advisor
- **Read** papers, start thinking of a problem
- Do 699/898 for early research experience
- Complete portfolios



- Take more **courses** to support your research area
- Develop a dissertation topic, do preliminary research to establish feasibility, recruit a committee
- One or more research-oriented Internships
- Write & defend dissertation proposal (aka prem. exam)
- Work more, sleep less, coffee, dine at vending machine, write papers, present papers, write dissertation
- Defend dissertation
- Interview and get job

# **Research Advisors**

- You start with a **temporary** advisor
- S/he probably won't be your research advisor and is under no obligation to take you on as an advisee
- You're responsible for finding an advisor who will guide your M.S. or Ph.D. research
- Ideally, do this early on in your second semester, but positively by the end of your first year
  - -Renewal of support depends on it!
  - -Don't leave it to the last minute!
  - -Submit the change-of-advisor form *even if your temporary advisor == research advisor!*



# How to Find a Research Advisor



- Decide areas of interest; *all areas* is not a valid answer!
- Take classes in those areas; very important, even more important than taking core classes
- Talk to students in those areas; what do they they do? What are their advisor's interests?, inside scoop on lab?
- Attend talks and thesis/dissertation defenses
- Read a lot on the topics you are interested in
- Downselect to a few candidates, arm yourself with knowledge of their projects and how you might fit in...

# **Contacting Potential Advisors**

 Knock on door or set up appointment by email



- Have icebreaker questions at the ready:
  - I'm interested in areas X, Y, and Z. Can you tell me more about your research in those areas?
  - Do you have any ongoing projects that I might be able to learn more about or contribute to?
  - May I sit in on your lab meetings?
- Be persistent...
  - Stay in touch with your potential advisor(s)
- ...but not annoying
  - Faculty are usually busy and have limited time

# **Develop relationships with faculty**

- Just as *"it takes a village to raise a child"*, it takes a department to train a graduate student
- To do your research, you'll probably need to become expert in several new areas
- Pragmatically, you'll need a committee of three to five faculty for your thesis or dissertation
  - and can benefit from having a set of faculty who can serve as references



# Campus Resources and Activities



Join Our Online Community





Events shown in time zone: Eastern Google Calendar



#### Data Science MD @ UMBC: Streaming with Heron on the Mesos/Aurora Stack, 6:30pm Mon. Aug 30





#### News

PhD defense: Prajit Das, Context-dependent privacy and security management on mobile devices ÷

<u>↑</u>

August 18, 2017 12:44 pm

PhD Defense: Bryan Wilkinson, Identifying and Ordering Scalar Adjectives using Lexical Substitution

August 17, 2017 3:25 pm

Data Science MD @ UMBC: Streaming with Heron on the Mesos/Aurora Stack August 7, 2017 11:46 pm

talk: Sarit Kraus on Computer Agents that Interact Proficiently with People, Noon Fri 8/4

August 1, 2017 11:56 am

Baltimore Sun highlights UMBC programs that prepare students for high-demand careers July 30, 2017 12:15 pm

#### **Prospective Students**

Apply: graduate programs

#### Calendar Events

**New Graduate Student Orientation** 

#### Highlights Apply to UMBC's Data

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Cybersecurity GPD Rick Forno talks security, the 'war on cryptography' & qualities of good cyber professionals.



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PhD defense: Prajit Das, Context-dependent privacy and security management on mobile devices - ...



## The illustrated guide to a Ph.D.

- Professor <u>Matt Might</u>, CS, University of Utah has a good way of explaining what it means to do a Ph.D.
  - It is also applicable to doing MS research
  - and probably your life after graduation
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# imagine a circle that contains all of human knowledge



# By the time you finish elementary school, you know a little



## By the time you finish high school, you know a bit more



## With a bachelor's degree, you gain a specialty



### A master's degree deepens that specialty



# Reading research papers takes you to the edge of human knowledge



## Once you're at the boundary, you focus



## You push at the boundary for a few years



## Until one day, the boundary gives way



## And, that dent you've made is called a Ph.D.



### Of course, the world looks different to you now



## So, don't forget the bigger picture



# Keep pushing