Align Seminar

Mindset for Success

My Path to Khoury College

1998-2009 **BitX Solutions, Inc.** Founder & President
- {.gov .edu .org .com} x {desktop web mobile}

2002-2006 **NC State.** BS Computer Science
- TA+RA, Discrete+DBMS

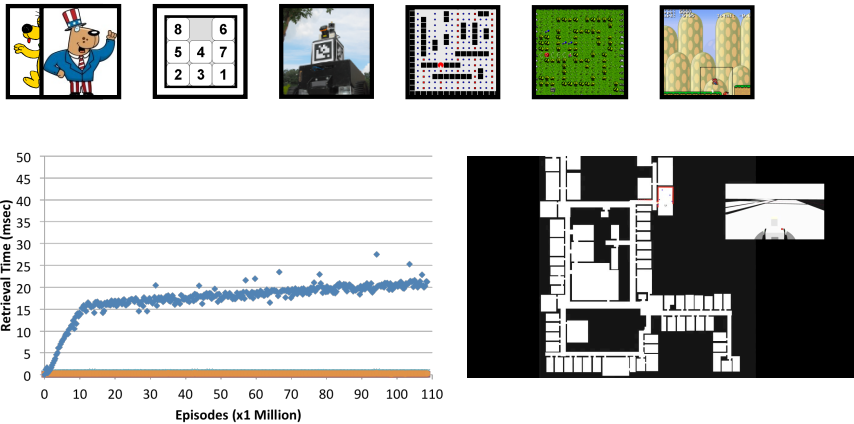**2006-2012** **U of Michigan.** MS/PhD Comp Sci and Eng
- TA+RA, AI+DBMS

2012-2014 **Disney Research.** Postdoctoral Associate
- Machine Learning, Optimization, Robotics

2014-2017 **Wentworth.** Assistant Professor
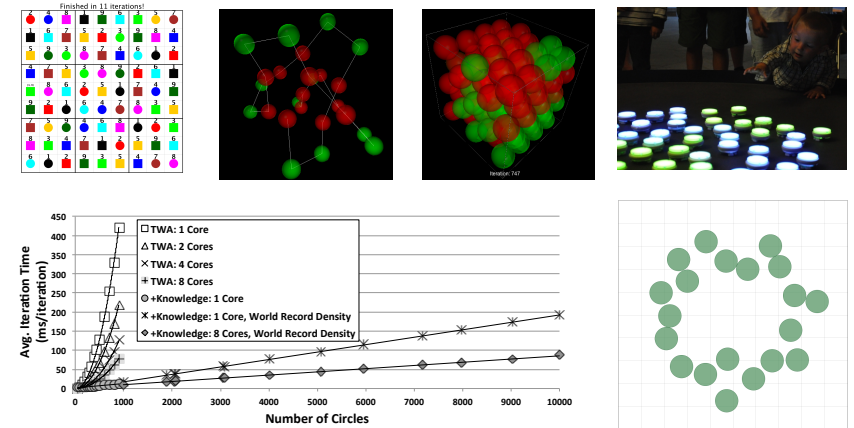- 3-3, Research/Service Learning

Mindset for Success

Research Interests

Cognitive Systems

Scalable Optimization

AI Applications/Education

Online ML
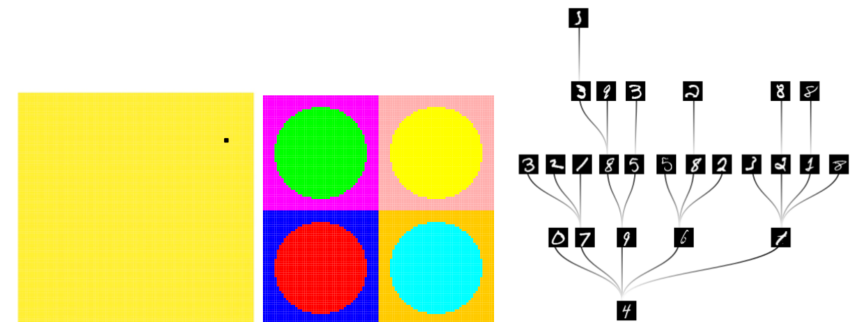
Teaching

K-12/ICT-D

UG/Grad

- CS1/2
  - OOP, Foundations

- Databases, Web, SE

- AI, Machine Learning

- HTMAA
  - RPi, Arduino

Mindset for Success

What is one thing you are planning to do to make sure you (and your cohort!) are successful?

Getting to Know YOU

- Name

- Pre-CS expertise/job

- Fun fact!

- One thing you are planning to do to make sure you (and your cohort!) are successful

Mindset for Success

Study Skills for Computer Science

Credit: Andrea Danyluk

(Williams College)

"My recipe for success is cramming!"
said no one, ever

- ## Recommendation: **start early**
  - ### Read through the assignment
  - ### Formulate initial approach and initial set of questions
  - ### Get clarification

Mindset for Success

Concepts Build on Each Other

- It's ok if you don't "get" a concept immediately, but don't go too long without asking for help, if you need it

    – Recommendation: iteratively learn the (life) skill of balancing time spent banging your head against something (i.e., due diligence) vs asking for help

- Can't really write off a concept, because you'll likely need it later (and often)

- This also means there are many opportunities to practice – and therefore, to learn!

    – But also… yes, it's probably going to "be on the test" in some form or other

Mindset for Success

Learning by Doing vs Reading

- Reading is great
  - Before class: Provides background and sets the context for what you can expect to see
  - After class: Allows for reflection, depth
  - Before exams: Serves as a useful reminder of what you've seen

- Practice is greater
  - Recommendation: type code, work problems/examples (until you can do successfully from scratch)
  - Recommendation: apply to a problem/project you are interested in!

Mindset for Success

Plan? Or Just Jump In?

- Would you want to drive over a bridge that was "designed" by starting with a big pile of metal and tools and then building with no plan?
  - Software systems are some of the most complex human-engineered artifacts of all time
  - Recommendation: get into the habit of planning your code, problem set solutions, etc.

- However, sometimes "jumping in" is a great way to learn or to test things out as a part of the planning process
  - Can test ideas during the process of learning
    - "I wonder what will happen if I try this…."
  - Can build and test small components that become part of a larger whole
  - Recommendation: lots of "Hello, World!" programs for new aspects of a project

Mindset for Success

Work with Others? Or Alone?

- Recommendation: a bit of both

- Computer Science is inherently collaborative
  - Great to get used to working in groups now

- Benefits of collaboration:
  - Working with others can provide you with helpful insights and explanations
  - Explaining to/teaching others can be a great way to learn
    - Recommendation: be a good student as well, push your "teacher" to help their understanding!

- Benefits of working through material on your own:
  - Ultimately you're responsible for what you know
  - Won't fall into the trap of inadvertently leaning too much on others

Mindset for Success

Embrace (Computer) Feedback

- There's something super satisfying about the moment you run something and… it works!!! 😅 💃

- It's so sad to run something and see that it doesn't work (for what may feel like the millionth time…) 😭 🤬

- Recommendation: embrace the feedback, and when it gets frustrating, *take a break*
  - Go for a walk, take a shower/nap, …
  - Note that *starting early* will put you in a better position for taking the time to walk away for a bit

Mindset for Success

Recommendation: **Ask Questions**

- In class, lab, office hours, Piazza, …
    - If you have a question, odds are that someone else in the room does, too!
    - Mindset challenge: learn to enjoy being (what feels like) the "dumbest" person in the room

- Having trouble formulating questions?
    - Use practice problems, class examples, etc. to help frame what you might not be understanding

Mindset for Success

Thank You :)

Questions?

Nate Derbinsky

Associate Teaching Professor

Director of Teaching Faculty

ISEC 530

n.derbinsky@northeastern.edu

https://derbinsky.info

Mindset for Success