

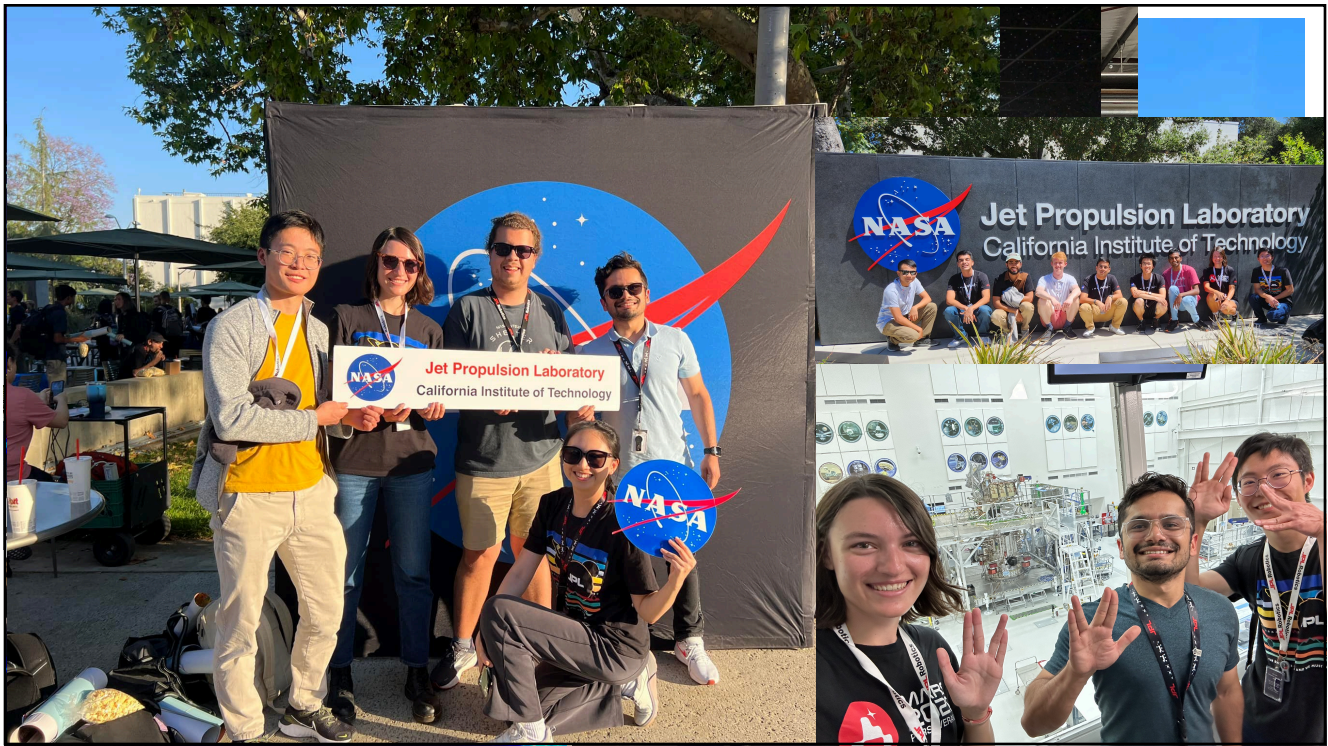


# About Me

**Major: CS**  
**Minors: Math, Music, Data Science**  
**FAIR work**  
**PhD in CS**  
**NASA NSTGRO fellowship**

2017 2021 2023 2024 Present

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# About Me

ILLINOIS Springfield Champaign  
INDIANA Terre Haute Indianapolis Cincinnati  
OHIO Dayton Columbus  
LOUISIANA Louisville Lexington  
KENTUCKY Evansville  
MISSOURI St. Louis  
WEST VIRGINIA

San Francisco  
CALIFORNIA  
Los Angeles  
San Diego

FA/RA work  
NASA NSTGRO fellowship

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## Overview

- Overview of my research topic
  - Motivation, specific question, experimental design, data collection, results\* (\*unpublished)



- Advice for future graduate students 😊



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ADVICE FOR FUTURE GRADUATE STUDENTS



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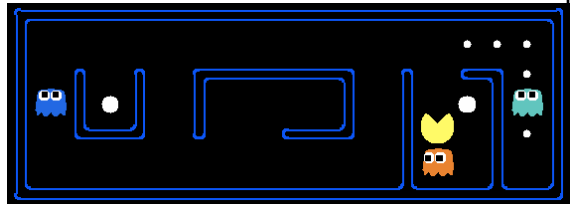


Tip #1:

## How to Succeed: redefine your reward function

- You are used to *sprinting*:
  - Test every 2-3 weeks, get grades and a sense of completion ✓
  - Just get to 10<sup>th</sup> week and you get a break!
- A PhD isn't a sprint, and semesters (and years) are long
  - You may not complete something for a long time
  - You won't be getting grades along the way to measure progress
- Additionally, Hours Spent != Progress
  - (1 random hour after a vacation could lead to a breakthrough)

*So how do you measure progress and stay motivated when research is uncertain?*



Tip #1:

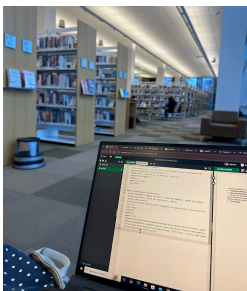
## How to Succeed: 3 words

... and by induction, this works!



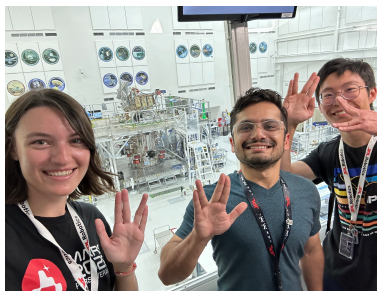
### Consistency:

show up every day, you may accomplish something even if you are tired



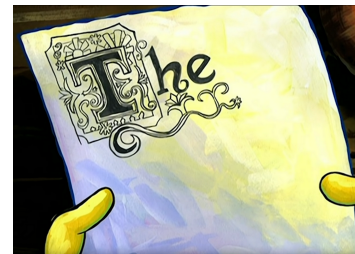
### Curiosity:

find something in your current task that intrigues you and keeps you going



### Iterative Improvement:

start simple and add on—save perfect for later and leave everything open to expansion! (CSSE220)



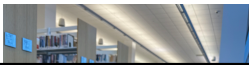
## Tip #1: How to Succeed: 3 words

... and by induction, this works!



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Outside of your consistency hours, have a hobby to focus on—you need to flush your cache every now and then to get new insights on your work



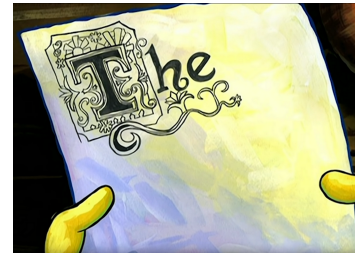
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## Tip #2: You are running the show!



Should I be working harder or faster on this?

Does everyone else think this is hard, or is it just me?

### At Rose, you:

- Received a problem set
- The problem was **actually defined**
- The instructions were written there *\*if lucky*
- They actually taught you something related to this homework in class! *\*if lucky*
- You have access to professors/peers that can help you!
- You can judge your progress off your peers

### In a PhD, you:

- Define the problem
- Plan—both long term and breakdown of steps for each task
- Teach yourself → Complete the tasks → Revise the tasks
- Your advisor might not have the answers
- Your advisor might not have the **right** answers
- You have to judge for yourself if something should actually be as hard as it is

Tip #2:

## You are running the show!



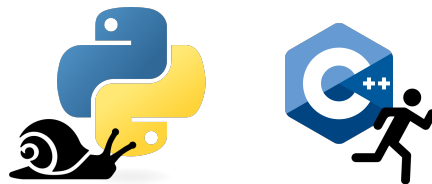
- Thinking/planning/'doing nothing' == doing work
- Your advisor can tell you whatever, but in the end you are the one who is doing the work and deciding which steps progress you in the right direction
- Justify any energy you spend—will this help you further your progress? If not, will it bring you joy, knowledge, or experience?
- Read for a purpose—don't just read a paper to say you read it
  - Know ahead of time what information you need from the paper, and what you plan to do with that information

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Tip #3:

## Don't Compare Yourself to Others

- A PhD is an individual journey—everyone is working on a different problem, so you literally cannot compare yourself to others' progress
- Everyone's strengths are matched with different struggles



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Tip #4:

## Crowd Mentality

- Don't be stressed just because others are stressed—e.g. the qual, the prelim, etc.
  - Might be subconscious
  - You will see people freaking out over things in the distant future and living on the edge
    - (i.e. cutting out basic needs like showering and saying they will not play video games AT ALL for a whole year, even in moderation). Maybe that works for them, but not everyone
- Suggestion: Have friends/activities outside of the university/your program
  - But, have some friends inside so you can keep tabs on things
  - Bonus: pick a hobby that is the exact opposite of what you normally do
    - Opposite of inside your head == physical activity, dancing
- Create your own perspective



## Other Advice

- Get a tablet for reading/annotating papers!!
- Work when is best for you (if you are given inspiration at 4am, use it!)

## Conclusion and Takeaways

- Everything I really learned, I learned at Rose
- Grad school removes the structure
  - You are in charge, everything is up to you, and you have to figure out how to plan
  - This is difficult
  - How to succeed: Consistency, Curiosity, Iterative Improvement—need all 3
  - Sprinting can lead to burnout—do everything with intention, do what works for you, and have hobbies/friends
- You probably will say proof by induction the rest of your life, describe everyday tasks in terms of  $O(n)$  notation, and feel bad when you forget your powers of 2.

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Questions?

*Maybe space isn't so  
silent after all*

