

# Ethan Hobbs

## PROFILE

Computer science master's student with experience in computational biology looking to use my skills in data analysis, statistics, and computer programming. Interested in interdisciplinary approaches to solving complex issues in public health and medicine.

## EDUCATION

- ⊕ **University of Colorado - Boulder** Boulder, CO  
*Masters in Computer Science (GPA: 3.71/4.0)* *Aug. 2018 – Expected: Dec. 2021*
  - ⊗ Relevant Course Work: Network Analysis and Modeling, Design Analysis of Algorithms, Mathematical Biology, Biological Image Analysis
  - ⊗ **Note:** All coursework has been completed during the summer term. However, the degree will be conferred in December.
- ⊕ **Carthage College** Kenosha, WI  
*Bachelors in Mathematics and Physics (GPA: 3.88/4.0, Magna Cum Laude)* *Sep. 2014 – May 2018*  
Minors in Spanish and Theatre
  - ⊗ Relevant Course Work: Computational Data Analysis, Data Structures and Algorithms, Theory of Statistics

## PUBLICATION

- ⊕ **Tredmilling and dynamic protrusions in fire ant rafts** Royal Scociety Interface  
*with Robert Wagner, Kristen Such, Frack Vernerey* *2021*
- ⊕ **A network model of transient polymers: exploring the micromechanics ...** Soft Matter  
*with Robert Wagner, Frack Vernerey* *2021*

## TECHNICAL SKILLS

- ⊕ C/C++: 1-2 years experience in academic environment
- ⊕ Python: 4 years experience in academic and research environment
- ⊕ MatLab: 5 years experience in academic and research environment
- ⊕ R: 1 year experience in research environment
- ⊕ Git - version control: 2 years experience in academic and research environment
- ⊕ L<sup>A</sup>T<sub>E</sub>X: 5 years experience in academic and research environment
- ⊕ Data Analysis (Python - Pandas and Numpy), Image Analysis (Matlab)
- ⊕ Reading and Understanding Technical Literature
- ⊕ Interdisciplinary Problem-Solving

## EMPLOYMENT

- ⊕ **Teaching Assistant** Boulder, CO  
*Computer Science Department, CU Boulder* *May 2021 – August 2021*
  - ⊗ Teach algorithms to undergraduate students under the direction of Michael Levet
  - ⊗ Lead undergraduate course assistants to understand the material and help in office hours
  - ⊗ Develop and lead weekly active learning sessions to undergraduate students
  - ⊗ Grade homework for conceptual understanding
- ⊕ **Teaching Assistant** Boulder, CO  
*Applied Mathematics Department, CU Boulder* *Jan. 2021 – May 2021*
  - ⊗ Taught Calculus 1 under the direction of Dr. Sujeet Bhat
  - ⊗ Planned and taught lessons weekly to undergraduate students to supplement the lecture material
  - ⊗ Provided one-on-one feedback to students through office hours
- ⊕ **Research Assistant** Boulder, CO  
*Mechanical Engineering Department, CU Boulder* *May 2019 – Dec. 2020*
  - ⊗ Under the direction of Dr. Franck Vernerey

- ⊗ Built computational tools to study fire ant collective behavior. Converted older Matlab version to Python for better code management and algorithmic speed improvements
- ⊗ Developed image and data analysis methods for experimental data of live fire ants
- ⊗ Resulted in 2 publications

### **Instructor**

⊕ *CU Science Discovery* Boulder, CO  
Apr. 2019 – Jul. 2019

- ⊗ Under the direction of Kathryn Penzkover
- ⊗ Developed a 2-week summer course for high school students on bio-informatics and mathematical modeling with a small team of graduate students
- ⊗ Taught mathematical modeling using disease spread as an example to high school students

### **Research Assistant**

⊕ *BioFrontiers Institute, CU Boulder* Boulder, CO  
Aug. 2018 – May 2019

- ⊗ Under the direction of Dr. Kristin Powell and a rotating expert
- ⊗ Worked in small teams doing team-based interdisciplinary research
- ⊗ Presented research updates to broad audiences

### **Undergraduate Researcher**

⊕ *Harvard University, TRiCAM program* Cambridge, MA  
Jun. 2017 – Aug. 2017

- ⊗ Under the direction of Professor L. Mahadevan
- ⊗ Worked in a team of four undergraduate researchers that investigated collective motion behavior
- ⊗ Built computational tools for studying collective motion in C++ and Matlab
- ⊗ Presented to diverse audiences (public and experts) and wrote a report detailing our findings

## PROFESSIONAL ACTIVITIES & SERVICE

### **Interdisciplinary Quantitative (IQ) Biology Symposium Co-Chair**

⊕ *BioFrontiers Institute* Boulder, CO  
Nov. 2020 – Present

- ⊗ Led the planning of the 10-year IQ Biology symposium and celebration
- ⊗ Scheduled meetings and delegated tasks to subcommittees
- ⊗ Worked with other Co-Chair to manage the teams and integrate their ideas into a cohesive event

### **2019 IQ Biology Orientation Coordinator**

⊕ *BioFrontiers Institute* Boulder, CO  
Mar. 2019 – Aug. 2019

- ⊗ Led a team of graduate students to prepare a week-long orientation for a diverse group of incoming graduate students
- ⊗ Oversaw the curriculum development and seminar planning
- ⊗ Topics covered: Introduction to coding and version control, Introduction to genetics, How to work in interdisciplinary teams
- ⊗ Coordinated a series of faculty talks during the orientation week

### **Alpha Psi Omega Treasurer (Local chapter)**

⊕ *Carthage College* Kenosha, WI  
Jan. 2017 – Jan. 2018

- ⊗ Worked on a leadership team to coordinate the finances of the group
- ⊗ Planned and ran a benefit for Broadway Cares/Equity Fights AIDS

## HOBBIES

Outside of work, you can find me exploring new cultures through food (especially baking projects), and fulfilling my artistic side through playing bassoon and listening to music.