Owen Martin

Ph.D Student

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About me

I study collective behavior and swarm dynamics of social insects in the Peleg lab at CU Boulder. I am an interdisciplinary computer science Ph.D student with a diverse set of skills and interests and a professional background in software engineering and quality. Currently, I am developing and programming a mathematical model for synchronized fireflies and studying network topology of insect swarms.

Skills

- Python
- Data Science
- Agent-Based Modeling
- Matlab
- C++
- git
- bash
- Mathematical modeling

Interests

Intellectually and professionally I am interested in collective behavior, complex networks, dynamics on networks, network inference, intelligence, and autonomous swarm systems. I spend my free time climbing, painting birds that I watch in the wild, backpacking, cooking, and writing.

Education

2020- Ph.D. student — University of Colorado Boulder
Computer Science, Physics of Living Systems

2013-2017 B.Sc. — Tufts University
Computer Science

Research

2020 Examining Disease Prevention Measures within Heterogeneous Communities — NetCOVID, COMBINE Institute, University of Maryland
Developed agent-based SIR epidemic model of social distancing effectiveness in heterogeneous communities and presented in front of online seminar of 200+ Ph.D students and postdocs

2019 Data-Driven Modeling of Bee Trophallaxis — Peleg group, CU Boulder
Developed agent-based Python model simulating *A. mellifera* movement and trophallaxis information/food exchange

2016 Techfugees — Tufts Institute for Global Leadership
Developed web app for international refugees in Lesvos, Greece and studied effectiveness of hackathons for social good

2013-14 Computer Simulation of Liquids — Lin group, Tufts University
Undergraduate computational chemistry research in the Lin group at Tufts University implementing algorithms for particle-particle interaction

Work Experience

2018-2020 Software Engineer in Test — NetApp Solidfire
Designed and implemented test automation framework for the performance team. Designed and developed feature test frameworks. Wrote dev-ops tools to facilitate company-wide test development across a variety of features.

2017-2018 Software Quality Engineer — Hitachi Vantara
Improved quality best practices through design and implementation of in-house test tracking software; streamlined test processes via script-writing and automating deployment of test environments.

2015-2017 Teaching Assistant — Tufts University
Tutored students in asymptotic complexity, data structures concepts and applications, and programming fundamentals; hosted collaborative grading groups with other TAs to improve the CS department's grading consistency, transparency, and accountability.

Relevant Coursework

Graduate Coursework in Computer Science — CU Boulder
Network Analysis and Modeling, Data Mining

Undergrad Coursework in Computer Science — Tufts University
Data Structures, Discrete Math, Programming Languages, Machine Structure and Assembly Language Programming, Web Programming, Computational Biology, Computational Theory, Computing for Developing Regions, Artificial Intelligence

Undergrad Coursework in Computer Science — Aquincum Institute of Technology
Structure and Function of Complex Networks, Data Science, Algorithms, User Experience Design