Eric Severson

PhD Candidate, UC Davis Graduate Group in Applied Mathematics

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Research interests	Distributed Computing, Molecular Computing, Stochastic Processes

Education

UC Davis — Davis, CA
PhD in Applied Mathematics — Fall 2016 – Present
Advisor: Professor David Doty.
GPA: 3.94

UC Berkeley — Berkeley, CA
BS in Applied Mathematics — Spring 2016
GPA: 4.0

Selected graduate coursework

- Probability and Stochastic Processes: Math 235ABC, Math 236A
- Theory of Computation: ECS 220 (Theory of Computation), ECS 222A (Analysis of Algorithms), ECS 289A (Molecular Computation), PHY 256 (Natural Computation and Physics of Information)
- Applied Math for Computer Science: Math 235B (Discrete Optimization), MAE 253 (Network Theory), NPB 287A (Neural Networks and Learning Theory), Math 226AC (Numerical Methods)
- Discrete Math: Math 245 (Enumerative Combinatorics), Math 280 (The Probalistic Method in Combinatorics)
- Applied Analysis and Differential Equations Math 201ABC, Math 207ABC

Skills

Programming
Proficient in: Python.
Familiar with: MATLAB.

Awards

William Karl Schwartz Scholarship: for outstanding mathematical scholarship and exceptional promise of making a strong professional contribution as a mathematics teacher — UC Davis, 2020

Percy Lionel Davis Award for Excellence in Mathematics — UC Berkeley, 2016

William Lowell Putnam Mathematical Competition:
Top 200 (Of 4275 Competitors) — 2015

Publications

A stable majority population protocol using logarithmic time and states.
David Doty, Masha Eftekhari, Eric Severson.
Technical Report 1907.06068, arXiv, 2020.

Message complexity of population protocols.

Talley Amir, James Aspnes, David Doty, Mahsa Eftekhari, Eric Severson.

DISC 2020: International Symposium on Distributed Computing.

Efficient self-stabilizing leader election in population protocols.

Janna Burman, David Doty, Thomas Nowak, Eric Severson, and Chuan Xu.

Technical Report 1907.06068, arXiv, 2019.

Composable Computation in Discrete Chemical Reaction Networks.

Eric Severson, Dave Doty, and David Haley.

Distributed Computing, 2020 (Journal).

PODC 2019: Symposium on Principles of Distributed Computing (Conference).

Teaching experience	**Associate Instructor, Department of Mathematics (UC Davis)**	
	Math 115A: Number Theory	Summer 2020
	Math 145A: Combinatorics	Summer 2019
	Math 21D: Vector Calculus	Fall 2018
	Math 21C: Partial Derivatives and Series	Summer 2017

Teaching assistant, UC Davis

ECS 289A: Graduate Theory of Molecular Computation	Winter 2021
ECS 220: Graduate Theory ofComputation	Spring 2020
Math 135B: Stochastic Processes	Spring 2018
Math 21B: Integral Calculus	Winter 2018
Math 21A: Differential Calculus	Fall 2017
Math 135A: Probability	Fall 2017
Math 108: Intro to Abstract Math	Winter, Spring 2017
Math 17C: Calculus for Biology and Medicine	Fall 2016

Guest lecturer, UC Davis Math Circle

Gave lessons to a group of talented middle and high school students

"The Sizes of Infinity"	Spring 2020
"The Game of Nim"	Spring 2018

Tutor, UC Berkeley Student Learning Center	Spring 2016

Lego Engineering Instructor, Play-Well TEKnologies

Taught engineering principles using Lego	Summer 2012 - Summer 2014

Worked with K-12 students in summer camps and after-school enrichment