GAVIN REES

Boston, MA
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RESEARCH INTERESTS

My research focuses on social behavior and combines approaches from theoretical biology, statistics, and evolutionary theory to understand ecological and evolutionary dynamics of intertwined systems. My primary focus is on biological complexity, and I've worked in evolution of cooperation in many-player social dilemmas, as well as inferring social dynamics in political bodies. Methodologically, I'm interested in stochastic processes, Bayesian modeling, combinatorics, and evolutionary models.

EDUCATION

Boston University, Boston, MA *September 2025 - Present*
Doctor of Philosophy, Computing and Data Sciences

Harvard University, Cambridge, MA *May 2021*
Bachelor's Degree, Mathematics
Minor in Computer Science

Overall GPA: 3.75
Relevant coursework: Mathematical Biology, Evolutionary Dynamics, Computational Social Choice, Game Theory with Applications to Social Behavior, Dynamical Systems, Random Processes and Algorithms, Computational Neuroscience

RESEARCH EXPERIENCE

Complexity Science Hub Vienna March 2023 - October 2023, March 2024 - March 2025
Visiting Researcher - Research Assistant, Edward D. Lee Group *Vienna, Austria*

Modeled political voting with Ising models, using techniques from graphical models to normalize structured Ising models that incorporated per voter tendencies and group interactions. Used Bayesian inference and variational methods to quantify uncertainty.

Institute Of Science and Technology Austria July 2022 - September 2023
Scientific Intern, Chatterjee Group *Klosterneuburg, Austria*

Theoretical analysis of evolution of cooperation in public goods games, particularly under resource inequality and heterogeneous productivities.

Program for Evolutionary Dynamics at Harvard University June 2019 - May 2020
Undergraduate Research Assistant *Cambridge, MA*

Researched social network evolution and the evolution of social norms in many-group settings in collaboration with Martin Nowak and Alex McAvoy.

WORK EXPERIENCE

Markforged July 2021 - July 2022
Software Engineer (Algorithms, Geometry, 3D Graphics) *Watertown, MA*

Member of the six person Slicer team, developing and maintaining a computational geometry pipeline for transforming 3D meshes into machine instructions. Led Slicer team's development of a multi-team product, from design to successful internal launch; product is now available publicly. Created performance testing architecture and improved runtime of user interface by 50x. Independently designed, presented to CTO, and received approval for substantial rearchitecture of Slicer's geometric pipeline.

ACADEMIC EXPERIENCE

Part-Time Tutor December 2023 - Present
Cambridge Coaching

Tutor students in mathematics, statistics, and computer science at the undergraduate level, and through the MITES program to high school students from underrepresented backgrounds.

Teaching

DS 121: Foundations of Data Science II: Linear Algebra. Fall 2026. Boston University.
Math 1a: Introduction to Calculus Peer Tutor 2018. Harvard University.
Engineering Sciences 91HFR: Humanitarian Design Projects, Project Co-Lead 2019-2020. Harvard University.

ACADEMIC ACHIEVEMENTS AND FELLOWSHIPS

CDS Wexler PhD Fellowship 2025-Present
Institute of Science and Technology Austria Scientific Internship Program 2022 and 2023
Harvard University Undergraduate Research Program 2019
NVIDIA Academic Hardware Grant 2019

VOLUNTEER EXPERIENCE

Engineers Without Border, Harvard SEAS Chapter October 2019 - September 2020
Project Co-Lead *Cambridge, MA*

Co-led the design, planning, and implementation of an onsite trip to the Southern Dominican Republic in January 2020, including negotiating well-drilling contracts, and coordinating hydrogeological and public health surveys. Managed a team of six students and two professional professional engineers in redesigning the planned water distribution system to address unforeseen on-the-ground complications. Co-designed and taught project curriculum in Engineering Sciences 91HFR.

Engineers Without Border, Harvard SEAS Chapter May 2019
Travel Team Member *Kibuon, Kenya*

Member of a seven-person assessment team that arrived in Kibuon, Kenya, to begin our community partnership. Conducted public health surveys and comprehensive census of Kibuon's 800 residents; made contact with local NGO's.

TECHNICAL SKILLS AND INTERESTS

Programming Languages	Python, Javascript/Typescript, C/C++, Julia, R, MATLAB
Libraries & APIs	Jax, NumPyro, PyTorch, Numpy, Polars, Pandas
Interests	Watercolor painting, creative writing, bouldering, travel