Henry Bendekgey

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Education

University of California, Irvine Fall 2019-present
Pursuing a Ph.D. in Computer Science, studying statistical machine learning.

Pomona College Spring 2019
Bachelor of Arts in Computer Science and Mathematics (Double Major) GPA: 3.97
Relevant Coursework: Combinatorial Optimization, Computational Biology,
Bayesian Statistics, Computational Statistics, Statistical Linear Models
Natural Language Processing, Topics in Topology and Geometry

Research Experience

Intern Summer 2019
Chan Zuckerburg Biohub San Francisco
Worked with the theory group on two projects touching biology, physics, and statistics:
∘ Investigating the ability of $(MC)^3$ to explore the space of phylogenetic trees, and
∘ Discovering a new power law for modeling diffusion in crowded dynamic spaces

Research Fellow Fall 2018
Computer Science Department Pomona College
Designed a novel approach for understanding the landscape of personas across games;
Scraped and cleaned data from online *Dominion* logs to visualize player strategies.

Research Fellow Summer 2018
Kenneth Cooke Research Fellowship Pomona College
Researched the mathematical models underlying state-of-the-art election forecasting;
Implemented adjustable forecasts for the 2018 midterm election based on these models.

Teaching Experience

Guest Lecturer Fall 2018
CS 151: Artificial Intelligence Pomona College
MATH 154: Computational Statistics
Gave guest lectures to upper-division undergraduate elective courses on:
Artificial Intelligence: Monte Carlo Tree Search and the Multi-Armed Bandit Problem.
Computational Statistics: Markov Chain Monte Carlo for Metropolis-Hastings.

Teaching Assistant
Computer Science Department Pomona College
∘ Computer Systems Fall 2018
∘ Fundamentals of Computer Science (Head TA) Spring 2017-Spring 2018
∘ Introduction to Computer Science Spring 2016-Fall 2016

Mentor and Grader
Mathematics Department Pomona College
∘ Linear Algebra Fall 2018
∘ Statistical Theory Fall 2018
∘ Combinatorial Mathematics Spring 2017-Spring 2018

Technical Experience

Engineering Intern Summer 2017
QuanticMind
Created an API for employees to access databases without requiring access credentials;
Led meetings with colleagues to generate common use cases to be addressed by API.

Publications

Clustering Player Strategies from Variable-Length Game Logs in *Dominion*.
H Bendekgey, AAAI Workshop on Knowledge Extraction from Games (KEG), 2019.

Consistency and Reproducibility in U.S. House of Representatives Forecasts.
H Bendekgey, arXiv preprint arXiv:1811.12466, 2018

In preparation: Diffusion in Crowded Dynamic Spaces. **H Bendekgey**, G Huber, D Yllanes, L Yan.

Programming Languages

Proficient with R, C, Python, Java, LaTeX;
Familiar with: SQL, C++, Scala, JavaScript.

Projects

Midterms Forecasting Website
github.com/hbendekgey/midterms-website
Codebase for a fully interactive website to understand the differences in popular election forecasting methods, and to see how changing assumptions or parameters affects the final forecast.

Spotify Data Science Workshop
github.com/hbendekgey/Spotify-Workshop
Detailed step-by-step instructions for how to use Spotify's API to get audio features of one's own music library, and then practice common machine learning techniques in Python on that data.

Cellular Automata
varsncrafts.com/#/crafts/react/Cellular%20Automaton
Implementation of a generic cellular automaton with modifiable rule space, to understand how emergent properties can manifest in seemingly simple systems.

UC Irvine Awards

Enhanced Computer Science Department Excellence Fellowship 2019
Allows first-year Ph.D students to engage sooner and more deeply with research by dispensing with teaching assistant requirement.

Dean's Award 2019
Extra first year grant for outstanding research potential.

Pomona College Awards

Paul B. Yale Computer Science Prize 2019
Awarded annually to an outstanding senior majoring in Computer Science.

Phi Beta Kappa Award 2019
Awarded to a senior for high quality of scholarship and promise of future distinction.

Kenneth Cooke Summer Research Fellowship 2018
Grant for summer research in an area of applied mathematics or statistics.

Bruce Jay Levy Prize in Mathematics 2018
Awarded annually to a student for excellence in the field of mathematics.

Llewellyn Bixby Mathematics Prize 2017
Awarded annually to a sophomore for excellence in the second year of mathematics.

National Awards

Phi Beta Kappa Member Elected Junior year, 2018
The oldest honor society in the country; at eligible schools, 2% of Juniors are elected.

National Merit Scholar 2015
College scholarship based on performance on the Practice SAT.

Caroline D. Bradley Scholar 2011-2015
Merit-based, four-year high school scholarship granted to 11 students nationally.