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Holly Mandel

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Education

University of California, Berkeley 2017–2022
PhD, Mathematics
Degenerations of Negative Kähler-Einstein Surfaces (Mandel, J. London Math. Soc.)

Yale University 2010–2014
BS, Biology
Phi Beta Kappa, *summa cum laude*, distinction in the major

Employment

Vatic Investments, Quantitative Researcher June 2022–May 2024
- Developed statistical trading strategies, researched and onboarded new datasets as part of the statistical arbitrage team
- Designed and implemented an automated pipeline controlling an aspect of trading execution as part of the high frequency trading team

Clark lab, Yale MCDB, Research Associate June 2014–August 2015
- Ran experiments and performed analysis to extract second and third-order kernels representing fruit fly visual motion detection (Salazar-Gatzimas et al., Neuron)
- Related nonlinearities in fly motion detection to natural scene statistics (Chen et al., eLife)
- Analyzed fluorescent imaging movies of fly neurons during motion detection tasks

Machine Learning Experience

- 2 years developing, validating, and deploying machine learning models for trading at Vatic
- Independently ran experiments using Hugging Face and Colab to locate and ablate induction heads in Mistral 7B
- Built a recursive code navigator and explainer using Python's ast module and Claude
- Completed an open-source deep learning curriculum using PyTorch, including implementing and training a transformer model for text prediction, training Lunar Lander agents using policy gradient methods, and replicating scaling law results on MNIST

Fellowships and Prizes

Eliciting Latent Knowledge Contest prizewinner, Alignment Research Center, joint with Jacob Hilton 2022
Graduate Research Fellowship, NSF 2017
Presidential Fellowship and School of Arts and Sciences Excellence Fellowship, Rutgers University, for doctoral study in mathematics (attended 2016–2017) 2016
Academic Excellence Award, Rutgers department of mathematics, for earning highest score on written qualifying exam which I took early as an entering student 2016
Full funding and stipend from Smith College, NSF to attend Smith Post-Baccalaureate Program for Women in Mathematics (attended 2015–2016) 2015
William R. Belknap Prize for Academic Excellence in Biology, Yale Department of MCDB 2014

Skills

Languages: Python (experienced): PyTorch, Pandas; C++ (familiar); MATLAB; LaTeX
Tools: Git/GitHub; Mathematica