Gabe Schumm

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Computational physicist with extensive experience in computational modeling, statistical data analysis, and machine learning. Eager to apply rigorous research and data-driven problem solving to real-world challenges in industry.

Education

Ph.D. in Physics, Boston University – 2025

Thesis: *Static and Dynamic Properties of Quantum Magnets*

B.A. in Physics, University of California, Berkeley – 2019

Phi Beta Kappa, Highest Honors in Physics

Relevant Coursework: Machine Learning for Physicists (BU), Computational Physics (BU), Principles and Techniques of Data Science (UCB)

Technical Skills

Languages: Python, SQL, Julia, Fortran, Bash, (basic), R (basic), JavaScript (basic)
Libraries: Numpy, SciPy, Pandas, Matplotlib, Scikit-Learn, PyTorch, TensorFlow, BigQuery
Computing and software: Git, LaTeX, Jupyter, SLURM, Microsoft Office, Tableau (basic)

Experience

Graduate Research Fellow – Boston University

August 2020 – July 2025

- Built modular, high-performance simulation software in Julia for 5 research projects, developing and applying Monte Carlo and Bayesian inference algorithms to model quantum systems.
- Developed reproducible pipelines for data analysis and visualization using Python and Jupyter.
- Maintained and documented research codebases on GitHub for collaboration across research teams.
- Applied advanced statistical and ML methods (cross-validation, dimensionality reduction, covariance analysis, generalized linear regression).
- Presented research findings in print (4 papers) and oral formats (5 conferences), using data visualization to communicate results to broad audiences.
- Organized research group meetings and mentored 5 junior researchers on coding best practices, statistical data analysis, and performance optimization.

Extracurriculars and Projects

Sports Analytics Group at Berkeley – Member

August 2016 - May 2019

- Consulted UC Berkeley's Men's D1 baseball team on pitcher evaluation using pitch tracking data.
- Cleaned, processed, and analyzed large pitch-tracking datasets, using results to simulate pitch trajectories and develop custom metrics to inform player analysis decisions.

Awards, Honors, or Fellowships

Research Fellow at the Flatiron Center for Computational Quantum Physics January 2024 - May 2024
Simons Foundation, New York, NY

Selected Publications

- **G. Schumm**, S. Yang, & A.W. Sandvik, Cross validation in stochastic analytic continuation, Phys. Rev. E, **110**, 055307, (2024).

Updated July 2025