

James A. Nguyen

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EDUCATION

University of California, Irvine, CA <i>Bachelor of Science, Applied and Computational Mathematics</i> <i>Concentration in Data Science, Minor in Statistics</i>	Sep 2022 - Sep 2025 3.76 GPA
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Relevant Coursework: Numerical Linear Algebra, Deep Learning and Neural Networks, Stochastic Processes, Real and Complex Analysis, Mathematical Optimization

RESEARCH EXPERIENCE

Undergraduate Research Assistant, Statistics <i>Donald Bren School of Information and Computer Sciences, UC Irvine</i>	Jun 2025 - Present
- Among 16 undergraduates admitted to the Summer Institute for Biostatistics (SIBS, NIH/NIAID REU) - Created pipeline in RStudio to process patient data and analyze effect of HIV on Tuberculosis treatment outcomes before and after universal access to Antiretroviral Therapy in Botswana - Produced pointwise metrics to evaluate spatial correlation between individual participants and justify assumptions of independence in regression modeling - Tuned random forest to identify nonlinear effects by variable importance plots	
Undergraduate Researcher, Mathematics <i>School of Physical Sciences, UC Irvine</i>	Sep 2024 - Sep 2025
- Proposed and optimized alternative sampling approaches using MATLAB to row-iterative projection methods for solving large-scale linear feasibility problems - Developed algorithm to cluster within linear systems to diversify sampling by orthogonality - New methods promote 100 percent faster convergence and better approximation error than Sampling Kaczmarz-Motzkin algorithm applied to the common case of ill-conditioned and overdetermined systems	
Computational Research Assistant, Data Science <i>Fortin Lab - Center for the Neurobiology of Learning and Memory</i>	Jun 2024 - Jan 2025 Irvine, CA
- Among only 6 undergraduates selected for funded position to continue research beyond SoCal Data Science Research Fellowship (NSF REU) - Developed and applied pointwise sliding-window analysis of correlation in Python for multinomial sequence detection in neuronal firing ensembles - Analyzed KL-divergence between Poisson-simulated hypothesis distribution and observed decoding probability distribution - Tuned an LSTM neural network in TensorFlow to produce unprecedented decoding accuracies	

PUBLICATIONS, PRESENTATIONS

A. Baniasad*, S. Chao*, J. Nguyen*, E. Tian*, C. Modongo, V. Minin, J. Sebastian, and S. Shin. HIV Remains a Risk Factor for Unfavorable Tuberculosis Treatment Outcomes in the Era of Universal Access to Antiretroviral Therapy in Botswana, medRxiv, 340699, 2025, preprint available at doi.org/10.1101/2025.11.26.25340699

J. Nguyen*, O. Presnyakov*, A. Radhakrishnan. Read Between the Hyperplanes: On Spectral Projection and Sampling Approaches to Randomized Kaczmarz, arXiv, 2025, preprint available at arxiv.org/abs/2511.03055.

* - joint first authors

TECHNICAL SKILLS

Git, Google Cloud Platform, LaTeX, MATLAB, NumPy, Pandas, Plotly, Python, PyTorch, R/RStudio, Scikit-Learn, SQL, TensorFlow, Tidyverse, VS Code, Matplotlib