

EDUCATION

- Stanford University

Stanford, CA
- B.S. Mathematics + B.S. Data Science; M.S. Computer Science (AI)

Expected Graduation: June 2025
- Coursework: Artificial Intelligence, Machine Learning, Convex Optimization, Computer Vision, Monte Carlo Simulation, Applied Matrix Theory, Probabilistic Method, Stochastic Diff. Eq.

SKILLS SUMMARY

- Languages/Operating Systems: Python, R, SQL, SAS, C++, Java, ReactJS, UNIX
- Frameworks: Snowflake/Snowpark, AWS, Scikit, PyTorch, OpenCV

TECHNICAL EXPERIENCE

- Chicago Trading Company (CTC)

Chicago, IL
- Quantitative Trading Intern

Jun 2024-Aug 2024
- Constructed Random Forest trade counterparty classification model integrated into Spark Data Generating Process (DGP), as a member of the Data Science & Analytics desk
- Completed trader education curriculum in Options Theory, Options Market Making, and Quantitative Modeling & Simulation
- Emily Fox Research Group

Stanford, CA
- Research Intern

Aug 2023 - Jun 2024
- Projects concern Deep Learning for Time Series analysis in PyTorch, through the context of personalized healthcare and medicine.
- Utilized Neural Ordinary Differential Equations (ODEs) to model physical exercise dependencies in Continuous Glucose Monitoring (CGM) sensor data.
- Amazon, Inc.

Denver, CO.
- Software Development Engineer Intern

Jun 2023 - Sep 2023
- Led integration (Java) of new high-tier product listing into API endpoint and AWS SWF to enable ID generation for Amazon Renewed, completely eliminating manual operations
- Implemented front-end updates (React) in seller-facing applications to allow approved merchants and internal users to seamlessly list high-tier products through updated API and workflow.
- Rosenberg Lab

Stanford, CA
- Summer Research Intern

Jun 2022 - Aug 2022
- Investigated mathematical properties of population-genetic statistics. Quantified allelic differentiation in a theoretical sense, and applied as features in Clustering algorithms.
- Prior Research Experiences

Salt Lake City, Utah
- Researcher

Sep 2017 - Aug 2022
- University of Utah Adler Lab: Stochastic ODE modeling & simulation in R to construct and validate times series forecasting for dengue fever dynamics
- UCSF Bakar Computational Health Science Institute: Time series forecasting and anomaly detection models for infectious diseases & NLP for geographic/racial disparities
- Huntsman Cancer Institue: Statistical modeling in R of racial disparities in the association between BMI and Breast Cancer

SELECTED PUBLICATIONS (GOOGLE SCHOLAR)

- Martheswaran, T.K., Hamdi, H., Al-Barty, A. et al. Prediction of dengue fever outbreaks using climate variability and Markov chain Monte Carlo techniques in a stochastic susceptible-infected-removed model. *Nature Scientific Reports* 12, 5459 (2022). <https://doi.org/10.1038/s41598-022-09489-y>

Barnard, M., Martheswaran, T.K. et al. Body Mass Index and Mammographic Density in a Multiracial and Multiethnic Population-Based Study. *Cancer Epidemiol Biomarkers*(2022); <https://doi.org/10.1158/1055-9965.EPI-21-1249>

Rochlin, I., White, G., Reissen, N., Martheswaran, T.K., Faraji, A. Effects of aerial adulticiding for mosquito management on nontarget insects: A Bayesian and community ecology approach. *Ecosphere*(2022); <https://doi.org/10.1002/ecs2.3896>

HONORS AND AWARDS

- Citadel Regional Datathon Top 3 Winner, Global Datathon Finalist - 2023
- International Data Analysis Olympiad Top 30 Finalist - 2022
- UCSF PRISM Conference Top Trainee Presenter - 2022
- American Society for Virology Conference, top student presenter - 2021
- Regeneron International Science and Engineering Fair (ISEF) Finalist - 2019 & 2020
- Junior Science and Humanities Symposium (JSHS), Regional Winner and National Runner Up - 2020
- Regeneron Science Talent Search (STS) Scholar - 2021