Eugene Francisco

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Education

Stanford University — Palo Alto, CA
Bachelor of Science, Mathematics; GPA: 4.035 — *Expected Graduation: June 2027*

School for Advanced Studies — Miami, FL
Associate's in Arts earned while dual enrolled in high school — *August 2021 – June 2023*

Experience

SpaceX — June 2025 - August 2025
Software Engineering Intern
- Flight software development for Falcon 9 avionics. Also launch operation work for Falcon 9 missions as part of the flight software team.

Undergraduate Teaching Assistant — September 2024 - June 2025
Stanford University
- Teach concepts and algorithms from the Python and C++ sequence of Stanford courses in a weekly section.

Software Intern — July 2022 – August 2022
Fairchild Botanic Garden — *Miami, FL*
- Implemented object detection model (YOLO V4) to detect leaves in photos of plants for botanical research.

Stanford Math Tournament — September 2024 - June 2025
Problem Writer — *Stanford, CA*
- Write combinatorics and probability problems for the Stanford Math Tournament.

Beekeeper — July 2024 – September 2024
Old Mill Apiaries, Private Farm — *Dumfries, Scotland*
- Managed hives, extracted honey, and helped with distribution at a private apiary in southern Scotland.

Projects

Choko-Zero — May 2025
- For CS-224R @ Stanford, using Proximal Policy Optimization (PPO) and a Policy Guided Tree Search (PGTS) to learn Choko, a West African board game. Project writeup here.

Deep Q Learning for Option Pricing — March 2025
- For CME 241 @ Stanford, a project to show how option prices can be learned by using deep Q-learning and treating pricing as an MDP problem. Project writeup here.

Visualizing the Itô Correction — September 2024
- Wrote this to visualize how quadratic variation of SDEs with Brownian Motion gives rise to the Itô correction.

Finding Generators in Finite Fields — July 2024
- Wrote this calculator to help find orders of different polynomials in finite fields of size p^2.

Relevant Coursework

Spectral Graph Theory | *Stanford Directed Reading Program*
- Quarter long reading program on spectral graph theory, expanders, psuedo-randomness, and tournament constructions. Advised by Maya Sankar.

Probability (Proof Based) | *Math 63DM, A*
- Markov processes; Central Limit Theorem; Maximum Entropy Principle; Uniqueness of Entropy Function.

Matrix Theory | *Math 113, A+*
- Spectral theorems; operators and minimal polynomials; matrix representations.

Machine Learning | *CS 229, A*
- Linear regression, classification, deep learning, backprop, and decision trees.

Reinforcement Learning for Stochastic Finance | *CME 241, A+*
- RL through the lens of finance; MDPs and different Q learning algorithms.