

Julian Faust

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EDUCATION

University of California, Berkeley – Junior

Bachelor of Science in Electrical Engineering and Computer Science (EECS)

Graduation May 2021

Major GPA: 3.89/ Overall GPA: 3.77

Past Coursework: *Deep Reinforcement Learning (Graduate), Theoretical Statistics (Graduate), Probability and Random Processes, Optimization Models and Applications, Real Analysis (Honors), Introduction to Machine Learning, Efficient Algorithms and Intractable Problems, Data Structures, Machine Structures, Discrete Math and Probability, Multivariate Calculus, Linear Algebra*

Test Scores: SAT (1560 – Math 800, Verbal 760), SAT Math II (800), SAT Chemistry (800), SAT French (800)

PROJECTS

Algorithmic Trading with An Ensemble of Deep Recurrent Q-Networks – Wrote and implemented a program using deep reinforcement learning to solve the algorithmic trading problem of determining the optimal trading position at a point in time. Our approach, as outlined in the research paper linked below, uses a completely novel and effective approach based on the popular Deep Q-Network (DQN) algorithm. Some of our changes include: using an ensemble-based approach to determine actions, a dueling network structure with an LSTM layer at the end, and an extended observation space including index and commodity prices, along with financial indicators. On the 27 stocks evaluated, our model delivered highly promising results, outperforming passive investment strategies.

EXPERIENCE

UC Berkeley, Psychology Department – Computational Modeling of Math Conception

Research Assistant

Berkeley, CA

September 2019 - Present

- Includes computational analysis of child and parent data on how they perceive/interact with math and how this affects math anxiety, including analyses of historical corpora and reading theoretical and empirical papers.
- Role includes using machine learning and other methods to code the resulting data for analysis

UC Berkeley Student Learning Center

Mathematics Drop-In Tutor

Berkeley, CA

July 2019 – September 2019

- Worked as a mathematics tutor for Berkeley students taking Math 32 and Math 96 (precalculus)
- Provided assistance for students as a tutor for 8 hours per week
- Attended weekly training sessions on teaching mathematics to college students

Phi Kappa Tau, Nu Chapter

Treasurer

Berkeley, CA

November 2019 – November 2020

- Elected to manage \$100K yearly budget and organizational expenses of chapter with ~65 active members
- Organizing distribution of funds to councils within chapter including philanthropy, community outreach, social committee
- Leading several major changes including transition to third-party dues payment system, organization of house-wide meal plan, creation of a reserve fund, financing a weight room, and introduction of several measures to increase financial transparency

SKILLS & INTERESTS

- **Languages:** Fluent in English (native speaker) & French (second language)
- **Technical:** TensorFlow/PyTorch, Java, Python, C, SQL, HTML, Excel

AWARDS

- UC Berkeley Dean's List (Spring 2019), Varsity Athlete of the Year (runner-up), Anthony Chan Award for Music, Michael A. Pincus Award for Mathematics