Siddharth Mishra

M: (201) 912-1227 • sidd.mishra@berkeley.edu • linkedin.com/in/sidd-mishra

EDUCATION

UNIVERSITY OF CALIFORNIA, BERKELEY **GPA: 3.94**

BS in Electrical Engineering and Computer Science (EECS) Expected **Spring 2026**

Relevant Course Work*:* Probability and Random Processes, Efficient Algorithms and Intractable Problems, Artificial Intelligence and LLMs, Applications of Machine Learning, Risk Management in Financial Institutions, DSA, OS, Multivariable Calculus, Advanced Linear Algebra

SKILLS

CS*:* **Python (Pandas, NumPy, SciPy)**, **C/C++**, **Machine Learning (Python, R)**, Snowflake, Java, Kafka, SQL, Git
Math: Stochastic Calculus, **Probability**, Linear Algebra, Multivariable Calculus, **Financial Modeling, Algorithm Development**
Soft Skills: Problem Solving, Logical Reasoning, Analytical Thinking, Effective Communication, Teamwork, Multitasking, Detail-oriented

EXPERIENCE

Jefferies Investment Banking — Software Engineering Intern, *New York City, NY* May 2024 – Present

- Developing a **Data Vault 2.0 (Python)** model integrating **Pandas into Snowflake** to enhance securities warehouse architecture
- Integrating 25+ complex financial systems, facilitating **efficient data retrieval** for **in-house quantitative market analysis**
- Optimized **ETL pipelines** and data retrieval mechanisms, achieving an average of **>20% reduction in query latency**

Aristocrat Gaming — Computational Engineering Intern, *New Delhi, India* Jun 2023 – Aug 2023

- Automated slot simulations **(C/C++)** by applying **complex probabilistic models** to verify the **Return To Player (RTP)**
- Performed **deep-dive data analysis** alongside mathematicians, significantly improving the logical models for **risk management**
- Utilized **decision trees** and **logistic regression** to analyze player behavior patterns which led to a **10% increase** in user retention rate

Berkeley Imaging Systems Lab — Undergraduate Researcher, *Berkeley, CA* Oct 2022 – Present

- Developed **advanced FFT algorithms (MATLAB)** for MRI image reconstruction, achieving **25% increase in diagnostic precision**
- Optimized image processing pipelines and applied vectorized linear algebra techniques to **reduce computational overhead by 40%**
- Working with a team of computer scientists and radiologists to integrate **deep learning models** using **TensorFlow**

Space Technology and Rocketry — Avionics Team Lead, *Berkeley, CA* Sep 2022 – Present

- Implementing precise **Arduino** software to initiate main parachute deployment at a predetermined altitude
- Engineered an ingenious **minimal noise mechanism structure,** leading to a **$5000 reduction in instrumentation cost**
- Developed a working **deployment PCB** and support **power distributions** for other parts of the payload

PROJECTS

Quantitative Analysis and Strategy Optimization for Sports Betting, *Berkeley, CA*

- Engineered predictive sports betting models using **Support Vector Machines** and **Neural Networks** and achieved **>77% accuracy**
- Optimized betting using **statistical arbitrage** and **Kelly criterion**, achieving a **Sharpe Ratio of 1.8** through refined back-testing
- Developed a **Monte Carlo-based risk management system** to dynamically adjust betting sizes and maximize return on investment

***E-Motion*: Impact of Social Media on market adjustments,** *Berkeley, CA*

- Developed **ARIMA** and **Random Forest models** to forecast stock prices based on sentiment analysis, **achieving 92% accuracy**
- Used **NLP** to analyze tweets and news, correlating sentiment scores with stock prices, with a **predictive accuracy RMSE of 0.28%**
- Established **rapid market response** to sentiment shifts, with significant stock price changes within **30 minutes** of tweet publication

Voice-controlled Car with Maze-solving capabilities, *Berkeley, CA*

- Programmed a voice-controlled car from scratch in **C++ and Python** and implemented a PCB and breadboard mixed design
- Implemented direction mechanisms using **SVD and k-NN classification** for machine learning
- Encoded brushed motors, sensor integration, control theory and implemented **pathfinding capability using the A* Algorithm**

***BYoW*: Game for generating explorable worlds,** *Berkeley, CA*

- Developed a **2D tile-based game** from scratch using the engine to build explorable worlds in **Java**
- Included features like **random map generation**, save and load structures, random encounters, and teleportation vents
- Implemented an **A* and Kruskal's MST algorithm** to generate valid hallways and rooms