Achal Singh

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EDUCATION

University of California, Los Angeles — Los Angeles, CA
B.S. + M.S. Mathematics of Computation — *Sep 2022 – May 2026*
- **GPA:** 3.7/4.0 | SAT: 1510/1600 | Kenya Math Olympiad | Waterloo Math Contest Honor Roll
- **Relevant Coursework:** Stochastic Processes, Statistics, Machine Learning Methods, Statistical Models in Finance, Data Science Methods, Linear Algebra
- **Programs:** Akuna Options 101 / 201, Bruin Development Academy: Buy-Side, Kaggle (Competitions Expert)

WORK EXPERIENCE

IQ-G Partner (Private Equity $4B AUM) — New York, NY
Data Science Intern — *Sep 2023 – Dec 2023*
- Helped manage $300 million portfolio through data-driven analysis based on MPT, optimized for given risk levels
- Filtered a dataset of 4,000 companies using Pandas, applying financial metrics as criteria to meet M&A requirements
- Parsed and performed data analysis on SEC filings via Python, identified growth opportunities of $300K in revenue

Careem (Uber Subsidiary) — Dubai, UAE
Corporate Finance Intern — *Jul 2023 – Sep 2023*
- Cleaned and consolidated revenue data using Pandas and NumPy from 6 different sources to present weekly
- Modelled Key Performance Indicators using Matplotlib to communicate insights and trends directly with CFO
- Tested 7 valuations using Monte Carlo simulations to estimate a fair distribution of Uber's acquisition premium

JumiaPay — Nairobi, Kenya
Data Analyst Intern — *Jan 2022 – Mar 2022*
- Conducted an analysis on individual spending patterns to identify anomalies and reduce fraud by 12% MoM
- Categorized customers based on proportion of spending to improve efficiency of targeted marketing campaigns
- Worked with the finance team to streamline process of consolidating and compiling data for weekly review reports

LEADERSHIP AND PROJECTS

UChicago Trading Competition 2024 — Chicago, IL
Quantitative Research Lead — *Apr 2024 – Apr 2024*
- Selected as the only UCLA team to compete against 17 other top universities, reached final table in poker tournament
- Netted top 3 PnL for majority of rounds, adjusting strategies as needed, switching from arbitrage to pairs trading
- Applied statistical methods like Bayesian optimization to refine trading strategies, yielding a 12% decrease in variance
- Created visualization dashboards using Matplotlib and Seaborn to display real-time data trends for decision-making

Airbnb Pricing Model — Los Angeles, CA
Summer Data Science Project — *Jun 2024 – Jul 2024*
- Performed a statistical analysis on Airbnb listings in LA, using k-fold cross-validation to achieve R2-score of 0.82
- Cleaned and prepared over 30,000 data points, leading to a reduction in outliers, missing values, unseen biases
- Applied one-hot encoding, polynomial features, interaction terms, and recursive feature elimination via a pipeline
- Implemented advanced regression techniques, including Lasso, Ridge, and ElasticNet, to ensure generalization

Bruin Traders — Los Angeles, CA
Junior Research Analyst — *Feb 2023 – Present*
- Developed a mean-reversion strategy on commodities futures, manually traded on Thinkorswim with personal portoflio
- Constructed an ARIMA time series model to forecast price movement fitted on multiple assets to reduce MSE by 65%
- Used Backtester over 5 years to achieve a 18% YoY return with a Sharpe of 1.3 and maximum drawdown of 7.6%
- Constructed a portfolio optimization model using mean-variance optimization, reducing exposure to volatility

LA Hacks 2023 — Los Angeles, CA
Data Scientist — *Apr 2023 – Apr 2023*
- Spearheaded development of a safety-focused navigation app that analyzed over 30 features and 150,000 datapoints
- Applied K-means and DBSCAN to group 100,000 geospatial points in LA based-on crime type and frequency
- Developed a random forest system to recommend paths with to adjust routes based on user-decided safety criteria

ADDITIONAL

Languages and Skills: C++, Python, NumPy, Pandas, Backtesting, Scikit-learn, Git, Jupyter, Matplotlib
Interests: Speedcubing, Tennis, Surfing, Soccer, Chess, Christopher Nolan, Star Wars, Hold'em Poker, Fashion, Clarinet