

AKASH KHANNA

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EDUCATION

University of Southern California

Los Angeles, CA

Bachelors of Data Science and Economics, Minor in Entrepreneurship

Jan 2022 - May 2025

- GPA: 3.77/4.0, Major GPA: 3.88/4.0
- Coursework: Linear Algebra (A), Number Theory (A-), Data Science (A), Introduction to Python (A), Econometrics (B+), Statistics (A), Microeconomic Theory (A), Macroeconomic Theory (A), Data Management (A), Machine Learning (A), Economic Applications of Machine Learning (A-), Intro to C++ (A-)
- Honors: Magna Cum Laude, Deans List all semesters

EXPERIENCES

NextGen Technologies

Remote

Data Engineer

July 2025 - Present

- Implemented data quality rules in Microsoft Purview for an ETL/ELT pipeline, achieving 92% data cleanliness
- Developed Python/Jupyter notebooks for metadata profiling (nulls, stats, uniqueness), improving QA efficiency

Delphian Trading

Tampa, FL

Summer Quantitative Analyst

June 2024 - August 2024

- Developed a predictive model for stock movement based on earnings reports, leveraging web scraping and statistics
- Implemented and backtested multiple machine learning techniques and algorithms, such as PCA, N-Split Validation, XGBoost, KNN, and Random Forest.
- Optimized feature selection using KNN clustering with top features from Random Forest, achieving an F1 Score of 70% and precision of 62% (positive signals were correct 62% of the time).

Prudence Asset Management

Hong Kong SAR China

Summer Investment Analyst

June 2023 - July 2023

- Researched bonds to identify undervalued securities and support portfolio rebalancing.
- Evaluated companies at investor roadshows and recommended investments based on financial analysis.

PROJECTS

Fraud Detection Rule Miner

- Engineered interpretable fraud detection system by mining decision-tree paths with depth-first search, surfacing human-readable rules for fraud analysts.
- Identified a high-signal fraud rule achieving 49% precision, outperforming random baseline precision (<4%).
- Balanced accuracy with explainability, enabling practical fraud screening where false positives carry operational cost.

Transformer from Scratch

- Built GPT decoder by reading and re-implementing "Attention Is All You Need" architecture in PyTorch from scratch

Interview Prep Software

- Built an AI interview platform using DeepFace (computer vision) and Vosk (speech-to-text) for real-time feedback.
- Developed a MongoDB backend to record, analyze, and store user sessions; created a Tkinter UI for interactive practice.
- Implemented openAI API to evaluate verbal clarity, confidence, and engagement, giving users improvement insights.

Student Success Predictor

- Developed a Random Forest model to predict student dropout and success rates
- Improved interpretability by performing feature selection via Gini loss scores
- Addressed data imbalance with SMOTE and class weighting, achieving 90% precision and recall on validation data
- Used SHAP values to explain feature importance and support actionable interventions

Sports Betting Arbitrage Detector

- Engineered a Python algorithm to detect arbitrage opportunities across sportsbooks

LEADERSHIP AND INVOLVEMENT

Sapphire Education

Los Angeles, CA

Technical Founder

Jan 2024 - August 2024

- Built an AI-powered college counseling platform leveraging OpenAI's API for automated essay analysis
- Designed and implemented prompt chaining techniques, improving response accuracy and reducing error rates by 10%
- Recognized as a Top 10 venture in BruinTank, UCLA's flagship incubator competition

SKILLS

Technical: Python, SQL, C++, HTML, Pandas, NumPy, scikit-learn, PyTorch, Matplotlib

Certificates: Harvard Intro to Probability (EdX), Intermediate SQL (DataCamp)