Rishi Mulchandani

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Education

University of Illinois at Urbana-Champaign **May 2026**
Bachelor of Science in Computer Science, Minor in Statistics *Champaign, IL*
Relevant Coursework: Probability/Stats, High Frequency Trading, Machine Learning, Software Design
Clubs/Involvement: ACM AI Applied Chair, Quant Education Exec Board, Fintech Lab Research

Technical Skills

Languages: Python, Java, C, C++, R, HTML/CSS, JavaScript, JQuery, ReactJS, Visual Basic
Developer Tools: Git, Docker, VS Code, Jupyter, Firebase, WordPress, SharePoint, Power Automate
Technologies/Frameworks: Numpy, Pandas, scikit-learn, tensorflow, Flask, Express.js, Node.js, PowerShell
Additional Skills: Agile, Linux, Flutter, Microsoft Office, AWS, boto3, Terraform, Jenkins

Experience

CyberArk **June 2024 - Present**
Site Reliability Engineer Intern *Newton, MA*
- Deploying and managing AWS infrastructure components such as VPCs, EC2, EKS, S3, tagging schemes, CloudFormation, etc. working with configuration management tools like Terraform, Salt, and Ansible.
- Implementing cloud-based monitoring, alerting and reporting with Datadog, Logz.io, InfluxDB, CloudWatch, Catchpoint, ELK, Grafana, etc.

Criterion Systems **June 2023 - Present**
Software Engineering Intern *Vienna, VA*
- Managing backend automation and scripting for the Mercury Correspondence System SharePoint site for the US Department of Agriculture (USDA) Forest Service (FS) through cloud computing/software development.
- Utilizing Microsoft SharePoint, PowerShell, Shell, Power Automate, and Excel VBA to resolve technical issues for the FS Mercury Correspondence System, ultimately reducing memory usage by more than 70%.
- Led the intern proposal group project to successfully develop a solution for a service-based innovation model.

Johns Hopkins University Applied Physics Laboratory **September 2022 - May 2023**
Research/Machine Learning Intern *Laurel, MD*
- Explored clinical decision-making under uncertainty and medical prediction with ML algorithms, presenting paper and study to the IEEE ISEC conference under mentorship of Dr. Caglar Caglayan.
- Using data from the National Hospital Ambulatory Medical Care Survey (NHAMCS), successfully developed an ML framework using Logistic Regression, Random Forest, and XGBoost algorithms to predict admission and critical care outcomes in patients presenting to emergency departments and accurately identified socio-demographic and clinical factors associated with admission/outcomes.

University of Maryland, Baltimore County **June 2022 - January 2023**
Research Assistant *Baltimore, MD*
- Conducted research with Dr. Riadul Islam and his UMBC VLSI-SOC Group collecting data and utilizing techniques such as CNNs, Reinforcement, and Supervised Learning for self-driving cars.
- Currently developing new CNN and physical hardware for autonomous driving on model RC car with 3D printed chassis, camera, servo driver, and Raspberry Pi.

Research

FOCAL Lab@UIUC **February 2024 - Present**
- Research on offline reinforcement learning from human feedback (RLHF) techniques and applications.
- Developing novel methodologies for training reward models from state-action pair human preference data.

Projects

Multi-Exchange Data Parser | *Python, OneTick Database, PCAP Decoding, Strategy Studio* **October 2024**
- Developed a universal market data parser, optimizing PCAP decoders and integrating level 1, 2, and 3 data from multiple exchanges (NASDAQ, CME, IEX) into a normalized format for historical analysis in OneTick.
- Implemented backtesting pipelines and Python scripts for querying, visualizing, and simulating trading strategies, optimizing storage and querying with time-series databases for efficient data access.

Stock Price Prediction App | *Python, Yahoo Finance API, Numpy, Pandas, Axios, Flask, React* **May 2024**
- Machine learning model (LSTM architecture) to predict stock prices for user-selected S&P 500 stocks.
- React frontend for a user-friendly interface to select stocks, days to predict, and view predictions graphically.