Apurv Deshpande

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Education

Virginia Tech — Blacksburg, VA
Masters of Science in Computer Engineering: GPA 4.0 — *2024 - 2026 (Expected)*

Savitribai Phule Pune University — Pune, India
Bachelor of Engineering in Computer Engineering: CGPA 9.58/10 — *2020 - 2024*

Experience

Graduate Assistant — Dec 2024 - Present
Virginia Tech — *Finance Information Technology*

- Managed and updated financial management software, applications, and websites for Virginia Tech, streamlining payroll, budgeting, and financial reporting processes through regular maintenance and feature enhancements.
- Collaborated with cross-functional teams to ensure seamless integration and functionality of financial systems, utilizing frontend and backend technologies for operational efficiency.

Quantitative Finance Researcher — Oct 2024 - Present
Virginia Tech — *Dataism Laboratory for Quantitative Finance*

- Conducted quantitative research and developed Bayesian MCMC (Markov Chain Monte Carlo) models for return prediction on the Intraday Momentum trading project for Barrett Capital Management, LLC.
- Developed a non-linearity testing RNN model using TensorFlow and hypothesis testing, achieving 15% increase in predictive accuracy.

Data Science Intern — Nov 2022 - Mar 2023
Hamoye — *Remote*

- Led the Stock Portfolio Performance Analysis project, delivering 10 interactive visualizations and comprehensive documentation.
- Implemented data preprocessing pipelines using NLTK, contributed to model development with PyTorch, and supported deployment using Flask.

Projects

Concurrent Neural Signal Processing for EEG Spindle Detection — Oct 2024 - Dec 2024

- Achieved up to 4.54x speedup in training time and 8.81x speedup in evaluation throughput for EEG spindle detection using Python's multiprocessing library.
- Demonstrated the feasibility of parallelizing time-series neural network tasks while maintaining model accuracy.
- Validated the effectiveness of parallel computing in neural signal processing for real-world EEG applications.

CodeCart: Barcode Enabled Application for Purchase and Inventory Management — Sep 2023 - Mar 2024

- Conceptualized a solution to reduce waiting time in checkout queues at supermarkets or stores by leveraging software development and computing.
- Designed and developed a dual-interface solution comprising a mobile application for customers and a web-based platform for retailers.
- Implemented robust inventory management features with sales analytics, enabling retailers to optimize stock levels and reduce operational costs while delivering a seamless, customer-centric shopping experience.

Stock Portfolio Performance Analysis for Portfolio Optimization — Nov 2022 - Jan 2023

- Developed regression-based models to predict absolute and relative stock win rates, demonstrating that absolute win rates achieved higher predictive accuracy.
- Achieved an 81% accuracy rate with the most effective model, providing valuable insights and data-driven strategies to optimize portfolio performance

Certifications

Google IT Automation with Python Professional Certificate (Coursera)
Google Cloud Career Readiness - Data Analyst track (Google)
Virtual Cyber Security Internship Completion (IBM SkillsBuild)
Google Crowdsource Learning Community Program (Crowdsource by Google)

Technical Skills

Programming Languages: Python, SQL, C++, PHP, VB.NET, Java
Data Analysis Tools: Pandas, NumPy, Matplotlib, Seaborn, Plotly, Tableau, Google Looker Studio
Modeling Frameworks: Scikit-learn, TensorFlow, Keras, PyTorch, XGBoost
Tools: Git, GitHub, MySQL, AWS (EC2, S3, IAM, RDS, Config), Microsoft Office (Word, PowerPoint, Excel)