Prajwal Shah

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Education

Purdue University **(Expected) May 2026**

- B.S. in Computer Science (Machine Intelligence) and B.S. in Economics (Mathematical Economics)
- Relevant Coursework: *Multivariate Calculus, Object Oriented Programming with Java, Intermediate Macro/Microeconomic Theory, Linear Algebra, Discrete Mathematics, Programming in C, Data Structures and Algorithms, Computer Architecture*
- Awards/Accomplishments: National Merit Finalist, SAT: 1530, Dean's List

Technical Skills

- Programming Languages: Java, Python, C/C++, C#, Javascript, Typescript, R, SQL
- Frameworks and Libraries: Spring Boot, .NET, React, Angular, Tensorflow/PyTorch, Flask, Node/Express, Numpy/Pandas
- Tools and Technologies: Git, Unix, Firebase, Supabase, PostgreSQL, Docker, Git/GitHub, AWS/GCP, OpenCV

Professional Experience

Countercyclical, *Software Engineering Intern* **August 2024 - Present**

- Implemented new functionality for a value-based investing platform using React (Typescript), Spring Boot, and PostgreSQL.
- Developed a new workflow to streamline database migration from Heroku for the development team using Github Actions.
- Refined the platform's assumptions model, enabling a 20% increase in the accuracy of equity valuations.

SURE Testing, *Software Developer (Freelance)* **June 2024 - Present**

- Led planning and development of a full-stack application for a proprietary testing platform.
- Built and secured the platform using Angular, .NET Core, and mySQL, with features like tokenization and JWT authentication for secure user and test data management.
- Implemented a CI/CD pipeline with Docker and GitHub Actions, deploying to GCP and utilizing Firebase Cloud Functions for scalable and efficient backend operations.

Abbvie, *Data Science and ML Researcher* **August 2023 - May 2024**

- Implemented an XGBoost model for the Market Analytics and Business Insight Team, enhancing touchpoint strategy effectiveness by 20%, as validated through Shapley values analysis.
- Developed and feature-engineered a machine learning model using Python and TensorFlow to optimize sales tactics.

Accendre, *Founding Software Engineer* **September 2021 - May 2023**

- Spearheaded entrepreneurship project, developing a web-app that created personalized workout programs for 200+ athletes.
- Directed a software team, utilizing Agile methodology to build a full-stack application with React.js and Ruby on Rails.
- Developed a science-backed algorithm for personalized workout programs, resulting in a 25% increase in user engagement.
- Constructed CI/CD pipeline using GitHub actions to build Docker images and deploy application to AWS EC2 instances.
- Implemented a strategic Minimum Viable Product (MVP) launch and conducted a structured beta testing program, gathering valuable user feedback and increasing the active user base by 150% within the first six months.

Leadership

Public Invention, *Project Lead* and *Open Source Inventor* **May 2024 - Present**

- Led the development of NanoCapTable, an open-source tool designed to manage equity cap tables for early-stage projects.
- Integrated real-time equity management and GitHub integration for secure data storage and version control.

Boiler Quantitative Finance Group, *Project Lead* **January 2024 - Present**

- Developed a commodity futures trading model using Python and financial APIs, incorporating historical data analysis to achieve a 10% increase in predictive accuracy over previous models.
- Enhanced option hedging strategies by integrating FFT (Fast Fourier Transform) and the Black-Scholes model, returning 15% over three months on corn and soybean futures and corresponding option chains.

Independent Projects

Finmath, A Financial Math Library **June 2024 - Present**

- Developed a financial math library written in C/C++ for high efficiency, with Python bindings for ease of use. The library implements key financial math functions such as Black-Scholes and option Greek calculations.
- Included machine learning capabilities such as regression analysis to support advanced financial modeling.

Trading Bot, Equity Trading Application **July 2023**

- Created a Python-based trading bot using financial APIs to execute mid-term strategies, yielding a 12% ROI in six months, leveraging robust libraries like Pandas and NumPy for data processing.
- Integrated MACD and Bollinger Bands, enhancing trading decision accuracy by 18% and increasing overall profitability.