Yash Shah

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Education

Rutgers University, New Brunswick — New Brunswick, NJ
Bachelor of Science in Computer Science and Economics — *Expected Graduation: May 2026*

- **Relevant Coursework:** Data Structures, Computer Architecture, Computer Networks, Design & Analysis of Algorithms, Linear Algebra, Linear Programming, Intermediate Macroeconomic & Microeconomic Analysis
- **Activities:** Rutgers Competitive Programming, Omicron Delta Epsilon (Economics Honor Society), Road To Silicon Valley Program (Cohort 5), Alpha Phi Omega (Professional Service Fraternity), Habitat for Humanity
- **GPA:** 3.7/4.0

Experience

Software Development Engineer Intern — June 2025 - August 2025
Amazon Web Services — *Seattle, WA*

Software Engineer Intern — June 2024 - August 2024
Raytheon — *State College, PA*

- Revamped an alerts and notification system by implementing a RESTful API using Spring MVC, Hibernate, and an Oracle SQL database, resulting in improved system efficiency which freduced alert delivery time by 20%
- Deployed the back-end microservice on a WildFly servlet container and created 20+ server and client-side unit tests using JUnit and Mockito, leading to greater stability and faster debugging
- Developed a JavaFX user interface for alert display, integrating it with the back-end service using asynchronous service calls resulting in a more responsive user experience
- Optimized machine learning model deployment in containerized environments by configuring JVM arguments and tuning the garbage collector, **reducing allocated but unused memory by 60%** while maintaining stability

Teaching Assistant (Data101) — January 2024 - May 2024
Rutgers University — *New Brunswick, NJ*

- Enhanced 27 students' proficiency in using R for data analysis, manipulation, visualization, and modeling, measured by their ability to solve challenging programming exercises by creating comprehensive exercises
- Conducted 1 on 1s with students, teaching them how to identify patterns, formulate hypotheses, apply statistical tests, and utilize Bayesian reasoning, fostering their ability to derive meaningful insights from complex data
- Improved students' skills in building, training, and testing predictive models using techniques like K-fold cross-validation and regularization for optimization and enhanced accuracy

Projects

Polyhymnia.ai | Hack Princeton Winner

- Developed a web app that generates unique, and personalized sheet music tailored to each user's proficiency level, enhancing learning and practice for musicians of all skill levels
- Integrated the Needleman-Wunsch algorithm to evaluate users' uploaded performances in pitch, rhythm, and timing, dynamically adjusting their proficiency score based on their performance for tailored progression
- Utilized Next.js for the front end, MongoDB for the database, musical libraries like Lilypond and Midi to convert from sheet music to text, and Markov Chains to build a scalable algorithm to generate unique sheet music

Algorithmic Trading Data Engine

- Engineered a backtesting framework for pairs trading strategies by integrating financial data parsing and time-series analysis, enabling efficient evaluation of asset correlations and trade profitability
- Developed an automated data pipeline using Python and Pandas to collect, clean, and normalize stock price data from Yahoo Finance API, ensuring accurate and up-to-date market insights for strategy testing
- Implemented statistical models, including z-score normalization and mean-reversion analysis, to identify mispriced asset pairs, improving strategy profitability evaluation and risk assessment

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, HTML/CSS, R, SQL, LaTeX
Frameworks & Libraries: Spring, Hibernate, JavaFX, WildFly, React, Next.js, Node.js, Express, Flask
Tools, Platforms & Other: Git, Maven, Jira, BitBucket, AWS (EC2, Lambda, Neptune), Agile Methodologies