Jules Zhang

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EDUCATION

Massachusetts Institute of Technology   **August 2022 – May 2026**

Bachelor of Science in Computer Science   *Cambridge, MA*

Minor in Mathematics   **GPA**: 4.7/5.0

Relevant Coursework: Algorithms, Data Structures, Machine Learning, Probability Theory, Financial Mathematics, Numerical Analysis, Linear Algebra, Multivariable Calculus

Programming Languages: Python, C++, C, Java, HTML/CSS/JS, TypeScript, SQL, R

WORK EXPERIENCE

AlphaGrep   **May 2024 – August 2024**

Quantitative Trading Intern   *Chicago, IL*

- Designed and implemented trading algorithms using Python and R, optimizing for speed and reliability; achieved a 20% increase in daily trading volume through improved execution efficiency
- Conducted in-depth statistical analysis on financial data, utilizing tools like Pandas, NumPy, and MATLAB to identify profitable trading opportunities, resulting in a 15% improvement in prediction accuracy
- Assisted in developing risk management strategies and tools, integrating with existing systems using SQL and PostgreSQL, which reduced portfolio drawdowns by 10%

Massachusetts Institute of Technology   **August 2023 – December 2023**

Course Assistant - Introductory Probability (18.600)   *Cambridge, MA*

- Assisted the professor in preparing lecture materials, including LaTeX slides and Python-based example problems; contributed to a 30% increase in student engagement during lectures
- Held weekly office hours to provide one-on-one assistance to 100+ students, clarifying course concepts and solving practice problems using MATLAB, leading to a 25% improvement in average test scores
- Graded homework assignments and exams, providing detailed feedback in R Markdown, helping students improve their understanding by 15% as measured by subsequent assignment scores

John Deere   **May 2023 – August 2023**

Software Engineer Intern   *Chicago, IL*

- Developed and maintained web applications using React, Node.js, and Express.js, improving load times by 40% through performance optimizations and implementing efficient Redux state management
- Improved application performance by optimizing database queries in MySQL, resulting in a 25% reduction in query execution time and enhancing the overall user experience
- Collaborated with cross-functional teams using Agile methodologies to define and implement new features, increasing end-user satisfaction scores by 15%

PROJECTS

Crypto Price Prediction Model   **January 2024 – May 2024**

- Built a machine learning model to predict cryptocurrency prices using historical data, achieving an 87% accuracy on the validation dataset through hyperparameter tuning in scikit-learn
- Utilized Python, scikit-learn, and TensorFlow for model development and backtesting, leading to a 20% improvement in prediction precision compared to baseline models
- Implemented data preprocessing techniques using Pandas and NumPy, reducing data processing time by 30%

Parallel Data Processing Framework   **January 2023 – May 2023**

- Created a framework for parallel data processing to handle large datasets efficiently, using Apache Spark and Hadoop for distributed computing, increasing data throughput by 6x compared to single-node processing
- Implemented fault-tolerance features in the framework, ensuring 99.9% uptime during processing tasks
- Optimized data partitioning strategies, reducing the overall processing time by 35%

Tools & Technologies

Machine Learning Frameworks: TensorFlow, scikit-learn, PyTorch
Data Analysis Tools: Pandas, NumPy, MATLAB
Cloud Platforms: AWS, Azure
Distributed Computing: Apache Spark, Hadoop
Databases: MySQL, PostgreSQL, MongoDB