Jeffrey Lu

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EDUCATION

University of Illinois Urbana-Champaign   Expected: May 2027
Bachelor of Science in Computer Science, Minor in Statistics   *GPA: 4.00*
Relevant Coursework: Data Structures, Computer Architecture, Probability & Statistics for Computer Science, Discrete Structures, Multivariable Calculus, Computational Linear Algebra

EXPERIENCE

Quant@Illinois   Sep. 2024 – Present
Quantitative Analyst   *Champaign, IL*
- Researched historical market data and trading strategies to identify emerging opportunities
- Developed and backtested pairs trading and momentum-based strategies using C++ and Python, achieving an 11% simulated portfolio return over 6 months

Northwestern University   May 2023 – Oct. 2023
Research Assistant   *Evanston, IL*
- Assessed the effects of drilling holes of varying shapes and orientations on the quality of superconductors
- Developed and executed bash scripts in Unix to automate CUDA simulations of superconductor configurations
- Designed data pipelines in Python, using Matplotlib and NumPy for visualization and analysis of results
- Authored detailed technical reports and presented research findings at a university symposium

PROJECTS

NBA Predictive Model | *Python*   Jan. 2024 – Present
- Engineered a data acquisition pipeline using requests, pandas, and selenium to scrape player statistics from NBA.com and betting odds from sportsbooks
- Developed a data pipeline to clean, structure, and preprocess raw data
- Applied statistical and machine learning models, including mean-variance analysis, ARIMA for time-series forecasting, and TensorFlow-based models, to predict player performance and betting outcomes
- Built correlation matrices and factor models to analyze relationships between player stats and betting lines

Personal Website | *SQL, PHP, HTML, Tailwind*   Dec. 2024 – Present
- Developed a user login system with HTML, PHP, and Tailwind CSS, ensuring a responsive and intuitive interface
- Implemented secure SQL storage for user credentials using prepared statements and password hashing
- Created an online blackjack game that tracks player stats using session management, enabling personal gameplay
- Optimized session management in PHP for efficient user tracking and a seamless personalized experience

Discord Bot | *Python*   Apr. 2021 – Aug. 2024
- Developed and maintained a bot serving over 200 users across 4 global servers, ensuring 97% uptime
- Integrated Discord API, YouTube API, and web scraping to automate real-time content retrieval and processing
- Implemented persistent key-value storage that reduced data retrieval latency by 40%, allowing for optimized in-bot economy management and enabling seamless mini-game experiences
- Processed over 2,500 monthly user interactions, maintaining stability under high concurrency

MathWorks Math Modeling Challenge | *Python, MATLAB*   Feb. 2023 – Mar. 2024
- Cleaned and prepared large governmental datasets for analysis and model development
- Implemented an agent-based model and used Fourier transforms to simulate and forecast homelessness trends
- Developed a Random Forest model to recommend solutions, reducing homelessness by 16% over 50 years
- Awarded Honorable Mention in Technical Computing: *top 5 out of 655*

AWARDS & HONORS

Dean's List: Fall 2024 *Top 20%*   *2024 – Present*
Chancellor's Scholar: Campus Honors Program: *150 students selected per cohort*   *2024 – Present*
AIME Qualifier 2x: American Invitational Mathematics Examination, Math Olympiad: *Top 5000 in US*   *2023–2024*
NAC Qualifier: National Astronomy Competition, Astronomy Olympiad: *Top 100 in US*   *2023*

TECHNICAL SKILLS

Languages: C++, Java, Python, SQL, JavaScript, HTML/CSS, R, PHP
Frameworks and Libraries: React, Tailwind, Pandas, Scikit-learn, NumPy, MatPlotLib, TensorFlow
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, Anaconda, Unix/Linux, Jupyter Notebook, Excel