Aarush Shah

217-372-0474 | aarushs2@illinois.edu | linkedin.com/in/aarushshah04/ | github.com/aarush04

EDUCATION

University of Illinois at Urbana-Champaign *Aug 2022 - Dec 2025*
Bachelor's of Science in Computer Science
- *GPA*: 3.65
- *Relevant Coursework*: Algorithms, High Frequency Trading Technology, Applied Machine Learning, Data Structures, Database Systems, Probability & Statistics for CS, Computer Architecture, Numerical Methods, Software Design, Discrete Structures.

EXPERIENCE

Paytm Payments Services Limited | *Python, TensorFlow, SciPy, Seaborn* *June 2024 - Aug 2024*
Risk Automation Intern
- Developed quantitative models to assess transaction risk, leveraging Python and statistical analysis to mitigate potential fraud.
- Automated data collection and cleaning processes using Python, enhancing the efficiency of risk monitoring systems by 20%.
- Deployed deep learning algorithms for real-time risk detection with the risk team, improving fraud detection accuracy by 15%.

Quant @ Illinois | *Python, R, MATLAB, Time Series Analysis* *Aug 2023 - (Present)*
Quantitative Trader and Researcher
- Performed exploratory data analysis on market data and built a robust and efficient backtesting framework in Python.
- Leveraged mathematical models, statistical techniques, and machine learning algorithms to build quantitative trading strategies.
- Collaborated with a cross-functional team of analysts and developers to backtest and refine algorithmic trading models.
- Developed execution algorithms for trading E-mini S&P 500 futures and deployed effective risk management techniques.

University of Illinois at Urbana-Champaign
Team Lead, Technology Services *Mar 2024 - (Present)*
- Supervised 50+ employees, conducting weekly performance reviews to provide feedback and ensure efficient client service.
- Interviewed and evaluated applicants for positions, and trained junior staff in handling complex and time sensitive issues.

Senior IT Consultant, Technology Services *Feb 2023 - Mar 2024*
- Supported 65,000+ clients including students, faculty, and admin with technological functionality and end user maintenance.
- Resolved 1,000+ issues, collaborating with a team of consultants to provide support for 300+ classrooms and various software.

Hines India Real Estate Private Limited | *React.js, Node.js, MySQL* *June 2023 - Aug 2023*
Software Engineer Intern
- Developed and deployed a full-stack candidate management system for the HR department, streamlining hiring processes.
- Achieved a notable increase of over 60% in hiring efficiency and saved approximately 3-4 hours weekly through the system.

Celebal Technologies India | *Python, Pandas, NumPy, PyTorch, Matplotlib, Sci-kit* *Mar 2021 - May 2021*
Machine Learning Intern
- Conducted a comprehensive review of classical machine learning algorithms to create a model for diabetic patient detection.
- Utilised techniques like hyper-parameter tuning to enhance the Random Forest Classifier, resulting in an accuracy rate of 81%.

PROJECTS

Stochastic Calculus Fixed Income Product Pricing Model
- Applied stochastic calculus for pricing fixed-income products and derivatives using Vasicek, Ho-Lee, and Hull-White models.
- Created a comprehensive framework for pricing instruments, considering interest rates, volatility, and market conditions.
- Verified the model's effectiveness by demonstrating pricing within 5% of actual market prices over a 6-month historical period.

The Alzheimer's App
- Developed a full-stack android application to provide day-to-day living support for early-stage Alzheimer's patients.
- Employed a robust tech stack of Java, Firebase, and ConstraintLayout ensuring seamless integration of all components.
- Engaged personally with 20+ Alzheimer's patients and integrated user feedback into the application during development.

Research Paper on Autonomous Surgery Using Artificial Intelligence (https://bit.ly/3ol3gbX)
- Evaluated the ability of a machine learning algorithm to perform a laparoscopic cholecystectomy autonomously.
- Determined the feasibility of implementing such an algorithm in an existing surgical robot such as the da Vinci Xi.

AWARDS & HONOURS

IMC Trading Prosperity 2: *Finished in the top ~1% for both algorithmic and manual trading* *March 2024*
CME Group University Trading Challenge: *Finished in the top ~5% of all participants* *October 2023*
Indian National Mathematics Olympiad (INMO): *Top ~65 nationally, qualified for IMO Training Camp* *April 2022*

TECHNICAL SKILLS

Programming Languages: Python, C/C++, Java, R, SQL, JavaScript, Verilog
Frameworks/Technologies: React.js, Node.js, MySQL, Git, Docker, Bloomberg Terminal, Unix/Linux, LaTeX