Aryan Gupta

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Education

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN   Champaign, IL
Computer Engineering, Big Data Analytics and Systems.   2027

Recent Experience

UNIVERSITY OF CHICAGO
Chicago, IL
Research Intern   June 2023 – September 2024
- Co-authored two peer-reviewed papers at the prestigious ACM CHI Conference, focusing on integrative haptics and wireless power transmission
- Engineered and validated prototypes with Python, C++, and Unity, streamlining data collection processes and reducing study timeframe by over 75%
- Automated data collection through the use of IRB-adhering mechanized study protocols, allowing for statistically significant findings with errors of less than 5%
- Was the youngest researcher to submit an accepted work

Projects

FINANCE & MATH
- Developed a web-based tool that visualizes the practical application of the Metropolis-Hastings Algorithm, a Markov Chain Monte Carlo method, to showcase its sampling capabilities in real-world scenarios
- Utilized sentiment analysis on open-source data to create a machine-learning model to paper trade public stocks with a return rate of 78%
- Created a perfect chess bot using the Minimax algorithm and Alpha-Beta pruning, resulting in 12% lower latency speeds and a 100% win rate
- Implemented a novel, entropy-based waveform-collapse algorithm in sudoku, reducing solving time by 40% compared to traditional computational methods

INTELLIGENT SOFTWARE
- Designed a Python/C# local-server-based avatar virtualization system, allowing users to recreate their physical being in and interact with the virtual world using OpenCV
- Developed an AI model with custom data to classify and recycle waste in a smart trash bin using biotechnology for forest reserves.

Leadership and Activities

RUN FOR WATER   Schaumburg, IL
Lead Web Developer & Graphic Designer   June 2022
- Co-founded a local community initiative to raise over $18,800 for villages in third-world countries with weak water supply systems, impacting the lives of 2,700 villagers across multiple continents
- Managed sponsorship deals, frontend and backend development for outreach website, and the online payment system, accounting for over 85% of the total funding raised

Skills & Interests

Research Processes: Study Automation, Data Visualization & Analysis, Monte Carlo Markov Chain Methods
Technical: Python, C++, Java, Javascript, Tensorflow, Optimization Algorithms
Planned Courses: Linear Algebra, Statistics & Probability, Combinatorics