Aryan Gupta

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EDUCATION

University of Illinois Urbana-Champaign — Urbana, IL
Computer Engineering, Big Data Analytics. — Expected Graduation: 2027
Fundamental Mathematics, Discrete Structures

James B. Conant High School — Hoffman Estates, IL
SAT: 1550 (800 Math, 750 Reading) — 2024
Hack Club, National Honor Society, Business Professionals of America
Multivariable Calculus, Statistics, Physics: Mechanics, Physics: Electricity & Magnetism

EXPERIENCE

University of Chicago — Chicago, IL
Research Assistant — 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

LEADERSHIP

Run for Water — Schaumburg, IL
Co-founder, Lead Web Developer, & Graphic Designer — June 2022 – Present

- Led a 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

PROJECTS

Markov Chain Monte Carlo Sampler
- 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

OSINT Sentiment & Context Analyzer for Investments
- Utilized sentiment analysis on public forums to create a machine-learning model to paper trade public stocks with a return rate of 78%

Minimax Algorithm for Chess
- Created a perfect chess bot using the Minimax algorithm and Alpha-Beta pruning, resulting in 12% lower latency speeds and a 100% win rate

Entropy-based Sudoku Solver
- Implemented a novel, entropy-based waveform-collapse algorithm in sudoku, reducing solving time by 40% compared to traditional computational methods

SKILLS & INTERESTS

Technical: Python, C++/C#, TensorFlow, Algorithm Optimization
Soft: Problem Solving, Communication
Planned Courses: Linear Algebra, Statistics & Probability, Combinatorics