Aryan Gupta

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EDUCATION

University of Illinois Urbana-Champaign Urbana, IL
Computer Engineering, Big Data Analytics. May 2027
Fundamental Mathematics, Discrete Structures, Linear Algebra, Statistics & Probability, Combinatorics

James B. Conant High School Hoffman Estates, IL
Hack Club, National Honor Society, Business Professionals of America 2024

EXPERIENCE

University of Chicago Chicago, IL
Research Assistant Jun 2023 – Sep 2024

- Co-authored 2 peer-reviewed papers 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%

LEADERSHIP

Run for Water Schaumburg, IL
Co-founder, Lead Web Developer, & Graphic Designer Jun 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 Aug 2024
- 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 Oct 2023
- 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 Jul 2022
- Created a perfect chess bot using an optimized Minimax algorithm and Alpha-Beta pruning, resulting in 12% lower latency speeds and a 100% win rate

Entropy-based Sudoku Solver Jul 2022
- Implemented a novel, entropy-based waveform-collapse algorithm in sudoku, reducing solving time by 40% compared to traditional computational methods

PUBLICATIONS

Haptic Permeability: Adding Holes to Tactile Devices Improves Dexterity Jun 2022 – Feb 2023
- Shan-Yuan Teng, Aryan Gupta, and Pedro Lopes. 2024. Haptic Permeability: Adding Holes to Tactile Devices Improves Dexterity. In Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24). Association for Computing Machinery, New York, NY, USA, Article 417, 1–12. https://doi.org/10.1145/3613904.3642156

SKILLS

Technical: Python, C++/C#, TensorFlow, SQL, JavaScript, React, React Native, R, HTML, CSS