Arpan Banerjee

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EDUCATION

Georgia Institute of Technology   Atlanta, GA
Bachelor of Science in Computer Science, GPA: 3.89   *May 2025*
- Relevant Coursework: Data Structures & Algorithms, Computer Organization & Programming, Systems & Networks, Machine Learning, Discrete Math, Linear Algebra, Probability & Statistics, Applied Combinatorics, Graph Theory

Master of Science in Computer Science (Specialization: Computing Systems)   *May 2026*

EXPERIENCE

Software Engineer Intern   June 2024 – August 2024
Millennium Management   *Miami, FL*
- On the Latency Critical Trading (LCT) team working on low latency trading infrastructure development with C++: primarily developed a framework to simplify the process of creating user defined features for traders
- Used retrieval-augmented generation to automate the comparison of market microstructure document versions, managing a filesystem and database pipeline with Amazon S3, and creating a user interface

Software Engineer Intern   May 2023 – August 2023
NCR Corporation   *Atlanta, GA*
- Used behavior-driven development testing frameworks such as Selenium, Serenity, and JBehave to automate user interface testing for the NCR Vision SaaS, automating dozens of manual PractiTest steps
- Worked on full-stack development of the tenant aggregation interface with Angular, Spring, and REST API, performing server-side validation using Postman and SQL

Undergraduate Researcher   September 2023 – June 2024
Fung Lab
- Contributed to development of a pre-release Python package MatStructPredict, for material prediction. Specifically, added functionality for surface reconstruction with a forcefield and basin hopping optimizer, and developed a framework to determine optimal placement of catalyst atoms on a bulk material
- Researched the extensibility of graph neural networks and their applications in the modeling of materials

Project Lead   January 2024 – May 2024
Big Data Big Impact
- Co-led a team of 10+ members in developing an ASL recognition system using computer vision techniques

Instructor   July 2022 – May 2023
Breakout Mentors, Recursive Dragon
- Taught group and one-on-one lessons about competitive programming, computer science, and C++/Java/Python

Research Intern   June 2021 – October 2021
Virginia Tech
- Researched regarding the multi-armed bandit problem in a delayed feedback setting. Simulated and visualized several versions of the upper confidence bound algorithm in Python, including our own novel version

PROJECTS

Trading Club @ GT | *Quantitative Developer*   September 2023 – April 2024
- Contributed to the development of a comprehensive end-to-end trading infrastructure, encompassing core system architecture, data query APIs, market connections, backtesting engines, and market data storage

AniText | *Vim, Regex*   October 2023
- Created contextual visual aides with generative AI and stable diffusion, boosting reading comprehension: Devpost

USA Computing Olympiad | *Data Structures and Algorithms, Ingenuity, Programming*   2019 – Present
- Platinum Division (top 220/15715 among pre-college participants from the USA at the end of 2020-2021 season). Problem writer of two problems in the January 2022 contest: Gold, Bronze
- Authored a book titled Dynamic Programming for Computing Contests , "This is impressively well-written and should indeed be an excellent resource for aspiring USACO competitors" - Brian Dean, director of the USACO and professor at Clemson University

Padder Vim Plugin | *Vim, Regex, Python*   2021
- Created a lightweight plugin for Vim to automate the addition of space padding around operators: GitHub

TECHNICAL SKILLS

Frameworks & Technologies: C/C++, Java, Python, Flask, Node.js, matplotlib, numpy, pandas, seaborn, plotly, scikit-learn, tensorflow, yfinance, selenium, serenity, SQL, Vimscript, Javascript, HTML, LangChain, AWS, Linux