Aryan Mittal

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Education

Georgia Institute of Technology — Atlanta, GA

Bachelor of Science, Double Major in Computer Science and Mathematics, GPA: 4.0 — *Expected May 2026*

- *Concentrations*: AI/Machine Learning, Information Internetworks, Probability & Statistics
- *Relevant Coursework*: Deep Learning*, Machine Learning*, Data Structures & Algorithms, Probability & Statistical Theory, Advanced Game Theory, Information Theory, Database Systems *(* graduate-level)*

Experience

Microsoft — May 2024 – August 2024

Software Engineering Intern – Azure Core Networking — *Atlanta, GA*

- Decreased network node failure detection time from **3 days** to **1 hour** and saved **8+** maintenance hours weekly by designing and implementing .NET service in C# to continuously monitor the health of **2000+** routers
- Deployed service to **198** Azure servers **globally** and improved security by eliminating **3000** yearly remote server logins
- Created utility service to export **16,000** rows of test result data per hour using Kusto queued ingestion API
- Authored comprehensive documentation on both services for use by team of **30+** developers
- **Skills:** C#, .NET Framework, Computer Networking, Azure, Kusto, Azure Data Explorer, PowerShell

Data Science Student Researcher — January 2023 – Present

Joel Sokol Lab (Georgia Tech) — *Atlanta, GA*

- Contracted by MLB team to develop optimization model for enhancing league efficiency and competitiveness (results under review by **MLB Commissioner's Office**, confidential, details discussable in person)
- **First-authoring** paper on model and co-designing graduate Sports Analytics course at Georgia Tech
- Designed logistic regression/Markov chain model to predict NFL playoffs (**beats** consensus spread: **63%** accuracy)
- **Skills:** Python, PyTorch, Scikit-learn, Pandas, NumPy, Gurobi, Linear Programming, Nonlinear Optimization

UPS Supply Chain Solutions — June 2023 – August 2023

Software Engineering and Analytics Intern — *Alpharetta, GA*

- Prototyped **98%** accurate cloud-based computer vision application for package damage detection and reporting (est. annual savings **$5M**)
- Restructured timecard database (**1.5M** entries) and corrected the pay rates for **350K** workers using Python script
- Wrote **3** automated test suites for new workforce management system to be used by **400K** employees
- **Skills:** Power BI, Google Cloud Platform, BigQuery, Vertex AI, Python, Pandas, Flask, Java, Azure DevOps

Mathematics Teaching Assistant — August 2023 – Present

School of Mathematics, Georgia Tech — *Atlanta, GA*

- Courses Taught: Multivariable Calculus, Linear Algebra
- Teach weekly recitation sessions to **70+** students, hold office hours, and grade assignments

Projects

Predicting the NFL Playoffs with LRMC | *github.com/thearyanmittal/nfl-lrmc* — January 2023 – May 2023

- Designed a logistic regression/Markov chain (LRMC) model to predict outcomes of NFL playoffs with **63%** accuracy (**beats Vegas spread**)
- Performed chi-squared **hypothesis tests** to compare models and evaluated **XGBoost**/decision tree model blends
- Originated novel metric for measuring football team performance by numerically integrating win probability

Package Damage Detection and Report — July 2023

- Awarded **1st** Place among Google Cloud projects and **2nd** Place across entire company (**250+** participants)
- Created **ResNet** vision model to detect damaged packages in warehouses and a **Looker** report to visualize trends
- Pitched design to panel of UPS CEO, CTO, and 10 VPs as team captain (team of 5)

The Cordiality Game | *Graph Theory Publication* — October 2021 – May 2023

- Invented graph-theoretic game with applications in statistical physics and proved **2** optimal play theorems
- Authored final paper ("The Cordiality Game" **published** in Q2 journal *Graphs & Combinatorics*)

Technical Skills

Languages: Python, C#, Java, SQL, HTML/CSS
Technologies: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, XGBoost, Power BI, BigQuery, Gurobi, OpenCV, Matplotlib, Seaborn, Pyplot, Django, Flask, BeautifulSoup, Selenium, .NET Framework