

# Aryan Mittal

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## EDUCATION

### Georgia Institute of Technology

Atlanta, GA

*Master of Science in Computer Science: Machine Learning, GPA: 4.0*

*Expected May 2026*

### Georgia Institute of Technology

Atlanta, GA

*Bachelor of Science in Computer Science, Minor in Mathematics, GPA: 4.0*

*Expected May 2025*

- *Concentrations:* AI/Machine Learning, Information Internetworks, Probability & Statistics
- *Relevant Coursework:* Deep Learning, Machine Learning, Probability & Statistical Theory, Data Structures & Advanced Algorithms, Information Theory, Game Theory, Quantum Computing

## 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 **2,000+** routers
- Deployed service to **198** Azure servers **globally** and improved security by eliminating **3,000** 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
- Created **4** Power BI reports to track work item status across entire WMS project (**60+** personnel)
- **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 studio/recitation sessions to **70+** students, hold weekly office hours, and grade assignments

## PROJECTS

### Predicting the NFL Playoffs with LRMC | [github.com/thearyanmittal/nfl-lrmc](https://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, Java, C#, 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