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, Computer Networking

Experience

Millennium Management — June 2025 – August 2025
Incoming Quantitative Software Engineering Intern — *Miami, FL*

Microsoft — May 2024 – August 2024
Software Engineering Intern – Azure Core Networking — *Atlanta, GA*

- Decreased network node failure detection time from **72 hours** 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** 2 papers 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

Projects

Portal Laptop | *youtube.com/watch?v=oXWgMwDAI2I*

- Built **$300** prototype laptop optimized for **20ms** average remote desktop latency with **sub-30 second** user setup time
- Designed and engineered **secure** backend in **Rust** for auth system, peer-to-peer routing, and device management
- Led **178** user interviews, conducted pricing analysis, and performed full statistical evaluation, visualization, and **hypothesis tests** of latency/jitter/packet loss experiments using **mixed effects models**

Predicting the NFL Playoffs with LRMC | *github.com/thearyanmittal/nfl-lrmc*

- Designed a logistic regression/Markov chain (LRMC) model to predict NFL playoff outcomes with **63%** accuracy (**outperforms 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

The Cordiality Game | *link.springer.com/article/10.1007/s00373-024-02798-1*

- 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#, Rust, SQL, Java, TypeScript, JavaScript
Technologies: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, XGBoost, Power BI, BigQuery, Gurobi, Pyplot, Django, Selenium, .NET Framework, Tauri, Axum, Solid.js