

Malachi Fordham

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EDUCATION

Georgia Institute of Technology, Atlanta, GA Aug 2025 - Dec 2027 (expected)

Zell Miller Scholarship Recipient

Bachelor of Science in Mathematics 3.61 GPA

Concentration: Mathematical Foundations of Data Science

TECHNICAL SKILLS

- Python (NumPy, pandas, Matplotlib, scikit-learn, Pytorch), Java, SQL, Excel
- Data Analysis, Cleaning, & Visualization • Statistical Analysis & Modeling • Optimization • Simulation • Machine Learning

PROJECTS

JPMorgan Chase & Co. Quantitative Research Virtual Experience (Forage):

- Built a time-series model to estimate natural gas prices and prototype a storage contract pricing engine.
- Developed a logistic regression model to estimate loan probability of default and compute expected loss.
- Applied dynamic programming to optimally bucket FICO scores into categorical risk ratings for default prediction.

Deep Residual Learning Reproduction:

- Reproduced the ResNet architecture from the paper *Deep Residual Learning for Image Recognition* and implemented residual neural networks in PyTorch.
- Designed experiments analyzing the degradation problem and showed that residual connections improve convergence in deep networks.
- Analyzed network depth vs. training/test error and gradient behavior in very deep models.

EXPERIENCE

Clayton County Parks and Recreation Oct 2023 - September 2025

Lead Lifeguard

- Supervised a team of 15-40 guards during peak operations.
- Trained and mentored new lifeguards, improving response readiness.
- Ensured safety and customer service for up to 2500 patrons daily, resolving incidents with zero safety failures under supervision.

INVOLVEMENT

Georgia Tech Data Science Club Member Fall 2025

- Participate in study groups and project sprints focused on Python data analysis and machine learning fundamentals.

RELEVANT COURSEWORK

Probability & Statistics • Linear Algebra • Data Structures & Algorithms • Computing for Data Analysis • Multivariable Calculus • OOP • Math Proofs