

# Michael Zuo

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## EDUCATION

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### Georgia Institute of Technology

Atlanta, GA

*B.S./M.S. in Computer Science, B.S. in Mathematics – GPA: 4.0/4.0*

*May 2027*

- **Relevant Coursework:** Data Structures & Algorithms, Systems & Networks, Artificial Intelligence, Databases, Machine Learning, Software Engineering, Computer Architecture, Object-Oriented Design
- **Awards:** 2025 GT Competitive Programming Contest Finalist, AIME 4x Qualifier, USA Physics Olympiad Semifinalist

## EXPERIENCE

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### Amazon

May 2025 – Aug. 2025

*Software Development Engineer Intern*

*Bellevue, WA*

- Cut business onboarding time by **90% (20 to 2 business days)** by building a CI/CD-driven workflow automation system with a self-service form in **Java, React, and TypeScript**
- Automated deployment and integration pipelines with AWS Lambda and DynamoDB, replacing manual email processes with API-based verification
- Enhanced operational visibility across **100+** business organizations by implementing AWS CloudWatch alerts, reducing incident resolution time by **40%** and strengthening system reliability

### Emory School of Medicine

Sep. 2025 – Dec. 2025

*Software Engineering Intern*

*Atlanta, GA*

- Developing an offline-capable **REDCap** data collection system using Service Workers and IndexedDB to enable healthcare staff to record patient data in rural Georgia without reliable internet
- Implementing a client-server architecture with **RSA-AES encryption** to ensure end-to-end HIPAA compliance, securing sensitive health records during offline storage and synchronized transmission

### College of Computing at Georgia Tech

Jan. 2025 – Present

*Head Teaching Assistant - Algorithms*

*Atlanta, GA*

- Design and publish algorithms assignments and solutions for **300+ students**, aligning with course learning goals and strengthening understanding of graph theory, dynamic programming, and time complexity analysis

## PROJECTS

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### Poker Strategy Evaluation Engine | *Python, FastAPI*

- Built a backend system to evaluate poker hands against over **1000** simulated opponent ranges per request with sub-**200ms** response times, exposed with a schema-validated FastAPI service
- Designed a reproducible decision pipeline that computes hand strength and recommendations, validated through unit tests and structured logging to support debuggable analysis

### WanderSync Travel App | *Java, Android Studio, Firebase*

- Built a travel coordination app for **over 300 Georgia Tech users**, leading a cross-functional developer team
- Shipped over **20 features**, including vacation planning, ridesharing, and scheduling tools
- Increased backend performance by **25%** through optimized Firebase data modeling and query design

### Spotify Trend Prediction Engine | *Python, PyTorch*

- Achieved **75% forecast accuracy** on **100k+ Spotify tracks** using PyTorch-based ML forecasting models
- Designed a scalable pipeline to process Spotify streaming data, enabling prediction of song popularity and trend shifts

## TECHNICAL SKILLS

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**Languages:** Python, Java, C++, C, JavaScript, TypeScript, SQL, HTML/CSS, XML

**Frameworks:** React, Next.js, Node.js, Django, Flask, Spring Boot, REST APIs, Nginx, Android Studio

**Databases:** MySQL, PostgreSQL, MongoDB, Firebase

**Cloud & Tools:** AWS (Lambda, DynamoDB, CDK, EC2, S3, ECS, CloudWatch), Docker, Linux, Git/GitHub, CI/CD, JUnit, Jest

**AI & ML:** PyTorch, TensorFlow, Scikit-learn, XGBoost, OpenCV, Machine Learning, Deep Learning