Michael Zuo

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Education

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, Operating Systems, Artificial Intelligence, Computer Networking, Databases, Machine Learning, Software Engineering, Computer Architecture, Object-Oriented Design
- **Awards:** Top 10, GT Competitive Programming Contest (2025) | AIME 4x Qualifier | USA Physics Olympiad Semifinalist

Experience

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*

- Designed and published Algorithms assignments and solutions for **300+ students**, aligning with course learning goals and strengthening understanding of graph theory, dynamic programming, and complexity analysis
- Responded to **500+** student questions across EdStem, emails, and office hours with quick turnaround, improving clarity and accessibility of course support

Projects

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

HeartNet | *Python, MongoDB, React*

- Developed a full-stack REST API and React platform backed by MongoDB, handling 500+ patient survey submissions in real time
- Integrated a neural network model to predict **Congestive Heart Failure** risk, achieving 90% accuracy with sub-2-second inference for clinical decision support

Skills and Interests

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