

TRINADH MUSUNURI

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EXPERIENCE

Central Michigan University — Research Assistant Sep 2025 – Present

- Replaced an inefficient evolutionary algorithm with a gradient-based optimization method.
- Achieved **50× faster** execution by reducing runtime from 30–60 minutes to under 2–3 minutes.
- Built and deployed optimized backend services and experimental pipelines on cloud infrastructure.
- Developed backend modules and APIs to support data processing, experimentation, and performance testing.
- Collaborated with faculty researchers to translate research code into stable, maintainable backend systems.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, C, SQL

Frontend: HTML, CSS, React.js, Bootstrap

Backend & APIs: Node.js, Express.js, RESTful APIs, JWT Authentication, Performance Optimization

Databases: MongoDB, MySQL, Relational Schema Design, Indexing, Query Optimization

Cloud & DevOps: AWS (EC2, S3, IAM, RDS, Lambda, Load Balancing), Google Cloud Platform, Docker, CI/CD, Linux

System Design: Scalable Architecture, Client–Server, Modular Backend Design

Core CS & Tools: Data Structures, Algorithms, Git, GitHub, Postman, Performance Profiling

PROJECTS

SkillSwap — Full Stack Skill Matching & Messaging Platform ↗

2025

- Built a full-stack web platform for skill matching, user profiles, and real-time messaging.
- Developed RESTful APIs with Node.js and Express for authentication and platform logic.
- Implemented real-time chat using WebSockets for low-latency communication.
- Designed MongoDB schemas for users, chats, and relationships.
- Deployed backend services on cloud infrastructure with secure configuration.

Transcripto (M-Sum-PAI) — Cloud-Based AI Summarization Platform ↗

2025

- Built a cloud-based system to summarize text, PDFs, audio, and video content.
- Developed scalable backend services and APIs for file handling and processing workflows.
- Implemented asynchronous processing for large inputs and concurrent users.
- Deployed services on AWS using EC2, S3, and IAM.

CERTIFICATIONS

Generative AI Engineering — Google Cloud

Nov 2024

Vertex AI, prompt engineering, model deployment, scalable ML pipelines, cloud-based AI workflows

AWS Cloud Technical Essentials — Amazon Web Services

Nov 2023

EC2, S3, IAM, RDS, cloud architecture, security fundamentals, high-availability design

Full Stack Web Development Certification

Aug 2023

HTML, CSS, JavaScript, React.js, PHP, REST APIs, database systems, web application architecture

EDUCATION

Master of Science in Computer Science — Central Michigan University

May 2027

College of Science and Engineering

Relevant coursework: Advanced Algorithms, Cloud Computing, Web Technologies, Machine Learning