

TRINADH MUSUNURI

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SUMMARY

Backend and Full Stack Engineer with research experience building scalable backend systems and cloud-deployed web applications. Strong in Node.js, RESTful APIs, AWS, performance optimization, and translating research prototypes into production-ready services.

PROFESSIONAL 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.
- Designed and deployed optimized backend services and experimental pipelines on AWS.
- Collaborated with faculty researchers to translate research code into stable, maintainable backend systems.
- Applied software engineering best practices including modular design, version control, and performance profiling.

TECHNICAL SKILLS

Frontend: HTML, CSS, JavaScript (ES6+), React.js, Bootstrap

Backend & APIs: Node.js, Express.js, RESTful APIs, API Security, Performance Optimization

Databases: MongoDB, MySQL, SQL, Relational Database Design

Cloud & DevOps: AWS (EC2, S3, IAM, Load Balancing), Cloud Deployment, CI/CD Concepts

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

Core CS & Tools: Data Structures, Algorithms, Git, Docker, Linux, Postman

PROJECTS

SkillSwap — Full Stack Skill Matching & Messaging Platform

2025

- Built a full-stack skill-matching platform with real-time peer-to-peer messaging.
- Designed secure RESTful APIs and WebSocket-based communication for low-latency interaction.

M-Sum-PAI — AI-Powered Summarization Platform

2025

- Developed a cloud-based system to summarize text, PDFs, audio, and video content.
- Built scalable RESTful APIs and deployed backend services on AWS for real-world usage.

CERTIFICATIONS

Generative AI by Google Cloud

Nov 2024

Vertex AI, scalable ML workflows (30% efficiency improvement)

AWS Cloud Technical Essentials

Nov 2023

EC2, S3, IAM, RDS, cloud architecture fundamentals

Web Development Certification

Aug 2023

HTML, CSS, JavaScript, PHP, React.js, DBMS

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