TRINADH MUSUNURI

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EXPERIENCE

Central Michigan University — Research Assistant **Sep 2025 – Present**

- Conduct research paper reviews, contribute to new ideas, and support paper writing and publication.
- Replaced an inefficient evolutionary algorithm with a gradient-based optimization method.
- Achieved **50**$\times$ **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 RESTful APIs to support data processing and experimentation.

TECHNICAL SKILLS

Programming Languages: Python, Java, JavaScript, C, SQL
Web & Frameworks: HTML, CSS, React.js, Node.js, Express.js
Backend & APIs: RESTful APIs, JWT Authentication, API Security, 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 Pipelines, Linux
System & Software Design: Scalable Architecture, Client–Server, Modular Backend Design, Microservices Basics
Tools: Git, GitHub, Postman, Docker, Linux, Performance Profilers, Debugging Tools

PROJECTS

SkillSwap — Full Stack Skill Matching & Messaging Platform **2025**

- Built a full-stack platform for skill matching and real-time messaging.
- Developed RESTful APIs and backend services using Node.js and Express.
- Implemented WebSocket-based real-time chat and MongoDB data models.
- 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 RESTful APIs for file handling and processing workflows.
- Implemented asynchronous processing and background jobs for large inputs and concurrent users.
- Deployed services on AWS using EC2, S3, and IAM with secure access control.
- Integrated external AI APIs and built automated pipelines for transcription and summarization.

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

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