Shivaganesh Nagamandla

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EDUCATION

University of Central Florida — Orlando, FL
Bachelor of Science - Computer Science (Dean's List, Bright Futures Scholar) — *Apr. 2026*

EXPERIENCE

Lead Software Developer — Apr. 2025 – Present
Knights Experimental Rocketry — *Orlando, FL*

- Developed React dashboards with Recharts to display real-time line charts of telemetry data at 60Hz, enabling operators to monitor 10+ live sensor streams during static fire tests.
- Built Node.js WebSocket server with PostgreSQL protocol to stream thrust, pressure, temperature data from a 24-bit ADS1256 ADC system across a 4,400-ft wireless network.
- Consolidated multiple scripts into a unified Bash script to auto-launch client-server infrastructure and database containers via SSH, cutting setup time by 80%.

Software Engineer Intern — May. 2025 – Aug. 2025
Oasis Social — *Orlando, FL*

- Co-led a GNN-based recommendation engine, improving unseen post ranking precision by 42% through survey vector embeddings and interaction data.
- Simulated 1,000+ user–post interactions with Python and PostgreSQL to generate realistic cold-start training data.
- Built and trained a GraphSAGE model in PyTorch Geometric, processing 3 node types and 2 edge types for link prediction.

Software Engineer Intern — May. 2024 – Aug. 2024
Hexaider Technologies — *Maitland, FL*

- Developed Spring Boot APIs within a flight reservation microservice, achieving a 28% increase in transaction success rates during peak booking windows.
- Engineered a solution to convert Kafka flight event streams into structured updates for a React.js dashboard.
- Managed 6 GitLab CI configurations, minimizing build overhead for airline microservices by 25%.

PROJECTS

DocuLens (GemiKnights 2025) | *React, Node.js, TypeScript, Firebase, Google Gemini API, Docker* — Jul. 2025

- AI-powered, helps immigrants identify errors in tax forms through document scanning and plain-English explanations.
- Integrated Google Gemini API with OCR fallback processing, handling PDFs with real-time status tracking.
- Implemented secure file validation, rate limiting, and error handling with comprehensive logging and monitoring for production deployment.

Google Gemini MCP Tool | *TypeScript, Node.js, MCP SDK, Bash* — Jun. 2025

- Built an MCP server integrating Claude AI with Gemini CLI for seamless 2M+ token codebase analysis.
- Created a token-aware routing system to offload large requests to Gemini models, cutting Claude token usage by 60%.
- Implemented sandboxed code execution, multi-model support, structured response validation and behavioral flags.

LyricLingo | *React, Node.js, MongoDB, Express, Redis, Cheerio, JavaScript* — Jan. 2025 - Mar. 2025

- Developed a full-stack language learning app leveraging Spotify, Genius, and DeepL APIs with JWT authentication, enabling real-time lyric translations in 9+ languages at 95% accuracy.
- Engineered a custom language auto-detection and lyric deduplication algorithm, reducing external API costs by 40%.
- Built an NLP pipeline with Hugging Face's RoBERTa model to classify lyrics into 28 emotion categories.
- Utilized Redis caching for flashcards and sentiment analysis, reducing load times 3+ seconds to under 200ms.

TECHNICAL SKILLS

Programming Languages: Python, Bash, Java, JavaScript, TypeScript, C, SQL, HTML, CSS
Frameworks/Libraries: React.js, Next.js, Node.js, Express.js, Spring Boot, Tailwind, NumPy, Pandas
Developer Tools: Git, Linux, Raspberry Pi, Docker, Postman, Jira, Visual Studio, CLion, Eclipse