Nithin Ram Kalava

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Summary

*Highly motivated and versatile Computer Science graduate with a strong foundation in **Software Engineering**, **Object-Oriented Programming (Python, Java)**, and advanced **AI/Machine Learning**, including **Generative AI** and **LLMs**. Proven ability to design, develop, and deploy complex end-to-end applications, with hands-on experience utilizing cloud platforms (**AWS & GCP - Vertex AI**). Proficient in Python, Java, JavaScript/TypeScript, SQL, and experienced with modern frameworks (React/Next.js), databases (PostgreSQL), and AI/ML tools (Scikit-learn, TensorFlow/PyTorch). Excellent problem-solver with a passion for innovation, MLOps concepts, and continuous learning. **My portfolio, linked above, and Google Cloud Skills Boost profile showcase live projects and extensive cloud/AI skill development.***

Skills

- **Languages**: **Python**, **Java**, **JavaScript**, **TypeScript**, **SQL**, C, HTML/CSS.
- **Core SWE & CS**: **Object-Oriented Programming (OOP)**, **Data Structures**, **Algorithms**, Problem Solving, SDLC, Code Quality, Software Testing Concepts, Agile Methodologies (Familiarity).
- **AI & Machine Learning**: **Generative AI** (Fundamentals, Gemini, Prompt Design), **LLMs** (Integration - Ollama, Transformer Models/BERT concepts), **Machine Learning Algorithms**, Deep Learning Concepts, **NLP**, Model Building Cycle, Python Data Stack (Pandas, NumPy), TensorFlow, PyTorch, **Vector Search & Embeddings**, Image Generation Concepts.
- **Cloud Platforms & MLOps**:
  - **AWS:** Academy Graduate (Cloud Foundations, Architecting, Machine Learning Foundations, Data Engineering).
  - **GCP (Google Cloud Platform):** Extensive Skill Badges including **Vertex AI Studio**, GenAI App Development (Gemini, Streamlit), Multimodal RAG, MLOps for GenAI, Data/ML/AI Foundations, Networking & Security.
  - **Concepts: MLOps** (Foundational), Cloud Architecture, Data Engineering on Cloud, Serverless (Familiarity).
- **Web Development (Full Stack)**: **React.js**, **Next.js**, Node.js (Backend via Next.js/Certs), **REST APIs**, Tailwind CSS.
- **Databases**: **PostgreSQL** (PL/pgSQL), MySQL, SQLite (Relational); MongoDB (NoSQL Basics); Database Design, Data Pipeline Development (ETL concepts).
- **Tools & Platforms**: **Git**, **Docker** (Basic), Linux (Proficient), VS Code, NPM, Vercel (CI/CD), Jupyter Notebooks.

Projects

PC Building Assistant Platform | AI-Powered Full-Stack Recommendation System

Tech Stack: Python (Scikit-learn, Pandas), TypeScript, **Next.js (React)**, **PostgreSQL**, REST APIs, **Ollama/LLM**

- Engineered a complex application with a **Python** backend for **Machine Learning**-based recommendations (Gradient Boosting) and intricate compatibility logic, coupled with a **PostgreSQL** knowledge base utilizing PL/pgSQL.
- Developed a dual-interface (conversational **LLM** & expert builder) frontend using **Next.js/React**, demonstrating practical **Generative AI** application.
- Implemented an end-to-end data pipeline (scraping, cleaning, transformation) analogous to cloud data engineering workflows, and **REST APIs** for service integration. Hosted live.

Post-Quantum Cryptography Library ('pqc') & Visualization Tool ('PQC-Vizz')

Tech Stack: JavaScript (ES Modules), NPM, Algorithms, (For Vizz: Next.js/React)

- Developed and published a pure **JavaScript** library ('pqc') implementing NIST Post-Quantum Cryptography standards, demonstrating deep algorithmic problem-solving and adherence to complex specifications.
- Achieved significant performance (**1029+ NPM downloads**, >2300 ops/sec for ML-KEM) and built an interactive **React/Next.js** visualization tool. Hosted live.

CareerPath Navigator | Full-Stack Educational Platform

Tech Stack: TypeScript, **Next.js 14 (React)**, Tailwind CSS, Vercel (**CI/CD**)

- Architected and built a user-centric, full-stack web application using **React/Next.js** and TypeScript, focusing on performance, accessibility, and deploying via **CI/CD** (Vercel).
- Implemented recommendation algorithms and managed application state for interactive tools. Hosted live.

Math Minute | Android Application

Tech Stack: Java, Android SDK, SQLite

- Developed a native Android application using **Java**, showcasing strong **Object-Oriented Programming** skills and mobile development fundamentals.

TECHNICAL ACTIVITIES & HANDS-ON EXPERIENCE

- Proficient **Linux** user, experienced with command-line and server environments.
- Consistent use of **Git** for version control; experience with **Docker** basics.
- Practical experience managing home lab infrastructure (NAS, server, networking).
- Active participation in Coding Club (Lead Member), organizing workshops and mentoring peers.
- Extensive hands-on learning via Google Cloud Skills Boost (30+ badges, Gold League).

EDUCATION

Bachelor of Technology (B.Tech) in Computer Science

Vasireddy Venkatadri Institute of Technology (VVIT), Guntur, Andhra Pradesh *2025*

- GPA: 8.26/10.0 (Expected Final CGPA: 8.28)
- Relevant Coursework: Object-Oriented Programming (Java, Python), Data Structures & Algorithms, Software Engineering, Database Management Systems, Artificial Intelligence, Machine Learning, Web Technologies, Cloud Computing Concepts.

Class 12 (94.7%): Sri Chaitanya Junior College, Guntur | SSC (9.8 GPA): Bhashyam High School, Guntur

CERTIFICATIONS

Key certifications demonstrating proficiency in Software Engineering, AI/ML, Data Science, and Cloud technologies. Extensive list including 30+ Google Cloud Skill Badges available on [LinkedIn](#) and [Google Cloud Skills Boost Profile](#).

- **DeepLearning.AI Specializations**: Deep Learning, Machine Learning, Natural Language Processing, TensorFlow Advanced Techniques.
- **Cloud Platforms**:
  - AWS Academy Graduate: Cloud Foundations, Architecting, Machine Learning Foundations, Data Engineering.
  - Google Cloud: Computing Foundations Certificate; Numerous Skill Badges (Vertex AI, GenAI Apps with Gemini, Multimodal RAG, MLOps for GenAI, Vector Search, Responsible AI).
- **Data Science & Analytics**: IBM Data Science Professional Certificate; Google Advanced Data Analytics Professional Certificate.
- **Development**: Meta Front-End Developer (React.js); freeCodeCamp (Back End Development & APIs, Scientific Computing with Python).
- **Core Skills**: HackerRank (Problem Solving, SQL); Google Professional Certificates (Cybersecurity, IT Support).