

Nithin Ram Kalava

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Profile

Results-driven Data Scientist and Machine Learning Engineer with expertise in post-quantum cryptography and full-stack development. Proficient in implementing complex algorithms, data visualization, and building secure web applications. Demonstrated ability to lead technical projects and create innovative solutions using cutting-edge technologies.

Skills & Abilities

- Machine Learning & AI: TensorFlow, Deep Learning, NLP, Neural Networks
- Data Science: Python (NumPy, Pandas, Scikit-learn), R, Statistical Analysis
- Visualization: Tableau, Power BI, Matplotlib, Seaborn
- Languages: C, Java, Python
- Web Development: React.js, Next.js, JavaScript/TypeScript, HTML/CSS
- Database: PostgreSQL, MySQL, Oracle, MongoDB, Google Cloud, AWS (basic)
- Post-Quantum Algorithms, ML-KEM, ML-DSA
- Tools & Platforms: Git, Docker, Linux

Projects & Development Experience

PC BUILDING ASSISTANT PLATFORM | FULL STACK WEB APPLICATION

- Developed a Next.js web application with dual interfaces: a guided LLM-based chatbot for beginners and an interactive component selector for experienced users
- Implemented a machine learning-based recommendation system using collaborative filtering for PC parts, integrating with PostgreSQL for data management
- Built a compatibility verification engine analyzing multiple component attributes, ensuring reliable PC builds
- Utilized Ollama for local LLM integration, adding real-time streaming responses with custom prompts for technical guidance
- Tech Stack: TypeScript, Next.js, TailwindCSS, Python (scikit-learn), PostgreSQL, Ollama/LLM

POST-QUANTUM CRYPTOGRAPHY IMPLEMENTATION | NPM PACKAGE

- Developed 'pqc', a pure JavaScript library implementing NIST's post-quantum cryptographic standards (FIPS 203, 204, 205)
- Engineered high-performance implementations achieving **2,300+ operations/second** for key generation in ML-KEM-768
- Published npm package garnering **330+ downloads** in first week of release
- Implemented lattice-based and hash-based cryptographic algorithms including optimized Number Theoretic Transform (NTT)
- Authored research paper analyzing implementation and performance characteristics

MATH MINUTE | ANDROID DEVELOPMENT

- Developed an engaging educational mobile app that gamifies basic mathematics practice
- Implemented Android Room Database for local data persistence and scoring system

- Engineered adaptive difficulty system using Java to maintain user engagement
- Created intuitive UI/UX with Material Design principles and smooth animations
- Features: Real-time scoring, performance analytics, multiple difficulty levels
- Technologies: Java, XML, Android Studio, SQLite, Material Design

LONDON BUS SAFETY ANALYSIS | TABLEAU, PYTHON

- Engineered comprehensive visualization dashboard analyzing London bus safety patterns
- Implemented advanced classification algorithms to categorize incidents by severity
- Created interactive route analysis tools and seasonal trend visualizations
- Impact: Generated actionable insights for safety improvements through data-driven analysis

Education

B.TECH. IN COMPUTER SCIENCE | 8.26 GPA | VVIT, GUNTUR, ANDHRA PRADESH

CLASS 12 | 2021 | 94.7% | SRI CHAITANYA JUNIOR COLLEGE, GUNTUR, ANDHRA PRADESH

Certifications

ADVANCED MACHINE LEARNING & AI

Deep Learning Specialization DeepLearning.AI (Dec 2024)

- Mastered CNN, RNN architectures and optimization algorithms
- Implemented production-grade deep learning solutions

Natural Language Processing Specialization DeepLearning.AI (Dec 2024)

- Developed advanced NLP models and transformer architectures
- Built practical applications using modern NLP techniques

TensorFlow: Advanced Techniques Specialization (Apr 2024)

- Custom training loops, advanced computer vision models
- Advanced model deployment and optimization

DATA ANALYTICS & ENGINEERING

Google Advanced Data Analytics Professional Certificate (Jul 2023)

- Advanced statistical analysis and predictive modeling
- Led multiple end-to-end machine learning projects

Google Business Intelligence Professional Certificate (Jul 2023)

- Developed ETL pipelines and data modeling solutions
- Created interactive dashboards and KPI tracking systems

IBM Data Science Professional Certificate (Jun 2024)

- Machine learning model development and deployment
- Advanced data visualization and statistical analysis

TECHNICAL EXPERTISE

Google Cybersecurity Professional Certificate (Jun 2024)

- Security information and event management (SIEM) tools
- Network security and incident response

Back End Development and APIs freeCodeCamp (Feb 2024)

- Built RESTful APIs and microservices
- Database integration and server-side development

CLOUD

Google Cloud Platform

- Profile: [cloud.google.com/\[your-profile-id\]](https://cloud.google.com/[your-profile-id])
- Areas of Expertise: Machine Learning on GCP, Data Engineering, Cloud Architecture
- Completed 50+ hands-on labs

AWS Cloud platform

- AWS AIML Virtual Internship
- AWS Cloud Virtual Internship

Activities & Interests

Theaters and films, PC Building, Legos