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| 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

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| * 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/seco**nd 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]
* 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