

# K. Durga Kalyan

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## Education

**Vellore Institute of Technology** Vellore, Tamil Nadu  
Bachelor of Technology in Information Technology — **CGPA - 8.61** 2022 - 2026

## Skills

**Languages:** Python, JavaScript, TypeScript, Java, C, C++, HTML, CSS, SQL  
**Libraries/Frameworks:** ReactJS, NextJS, NodeJS, ExpressJS, Bootstrap  
**Databases:** MongoDB, MySQL, PostgreSQL  
**Relevant Coursework:** Object-Oriented Programming, Operating Systems, AI, Machine Learning, Theory of Computation, Computer Networks, Embedded Systems and IoT  
**Other tools and platforms:** Git, AWS, Netlify, JIRA, BitBucket

## Work Experience

**NETSCOUT** June 2024 – July 2024  
**Software Engineering Intern - Gen-AI**

- Developed nGenie, a chatbot with RAG capabilities, for Netscout’s Packet Flow Manager (PFM), leveraging OpenAI’s documentation on <https://platform.openai.com/docs/api-reference/assistants>.
- Enabled the chatbot to handle customer queries via product manuals and live stats.
- Developed a local chatbot leveraging LLaMA 3 as the LLM and a Hugging Face dense embedding model for semantic vector retrieval within a RAG-based architecture.

**NETSCOUT** May 2025 – July 2025  
**Software Engineering Intern - ML**

- Developed and deployed a time-series forecasting model using the NHITS deep learning algorithm, achieving less than 2% Mean Absolute Error (MAE) in predicting hourly energy usage over a 1-year horizon.
- Engineered a Gen AI-powered World Network Monitor with JavaScript libraries, translating complex ML outputs into an intuitive world map for operators to visualize traffic flow and act on anomalies.
- Evaluated multiple algorithms for anomaly detection, identifying Random Forest Classification as the optimal model for detecting network congestion and building a dashboard to visualize classifier performance.
- Authored technical documentation for model architecture and performance, managing code versions and contributions using Git and Bitbucket within an agile workflow (JIRA).

## Projects

### VIT Riviera Website Clone

- Engineered the backend integration by connecting the front-end application to a MongoDB database.
- Focused on establishing the data flow between the user interface and the NoSQL database for dynamic content rendering.
- Tech:** HTML, CSS, Bootstrap, MongoDB.

### RAG Chatbot using OpenAI’s Assistants API and LLaMA 3 [Link](#)

- Built a chatbot for document querying, real-time stats with graph generation, and image fetching from Netscout data.
- Implemented function-calling to let GPT trigger backend functions (e.g., doc search, stats) for context-aware responses.
- Tech:** Python, Flask Jinja Templates, OpenAI Assistant’s API, Meta LLaMA 3, LlamaIndex.

### Real-Time Stock Market Dashboard [Link](#)

- Deployed a real-time stock market dashboard with a front end hosted on AWS Amplify and a back end running on an AWS EC2 instance.
- Resolved connectivity challenges by establishing secure SSH access to the EC2 instance for remote configuration and maintenance.
- Tech:** ReactJS, NodeJS, ExpressJS, Tailwind CSS, MongoDB.

## Certifications

- AWS Certified Solutions Architect - Associate** [\[View Certificate\]](#)
- AWS Certified Cloud Practitioner** [\[View Certificate\]](#)
- Practical Reinforcement Learning with Python** [\[View Certificate\]](#)