

KRISHNA VARDHAN

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Houston, TX | Open to Relocate within US



SUMMARY

Results-driven **Software Engineer** with 4 years' experience at G-Think Inventors, specializing in leveraging **Python, ML (LSTMs), and AWS** to develop **innovative smart home energy management solutions**. Proven expertise in building robust **data pipelines, predictive models, and MLOps**, achieving significant energy savings and operational efficiency. Passionate about applying **Generative AI (LLM, RAG)** to create **intelligent, data-driven systems**. Eager to contribute to cutting-edge projects that blend software engineering with advanced analytics.

PROFESSIONAL EXPERIENCE

Software Engineer, G-Think Inventors

Apr '20 – July '23

- **Designed and implemented** interactive dashboards and automated report production, increasing user engagement with energy monitoring features by **15%**. **Created dynamic visualizations** of appliance usage, peak demand, and energy savings using **Python (Matplotlib, Seaborn)** for a web-based reporting platform.
- **Developed and deployed** predictive models to estimate hourly electricity use at household and appliance levels by **modeling Long Short-Term Memory (LSTM) neural networks** using **TensorFlow** and **Scikit-learn**, integrating **time-series** and **meteorological data**. Adjusted hyperparameters to reduce forecast error, achieving a **20% RMSE reduction** in energy consumption projections. Enabled proactive adjustment of appliance schedules, saving consumers an average of **10% to 15%** on electricity bills.
- **Migrated and managed** the primary data analytics infrastructure to a **cloud-based** setting, improving **scalability** and **cost efficiency**. Utilized **AWS** services including **Lambda** for **serverless data processing**, **SageMaker** for **ML model training** and inference, and **S3** for scalable data lake storage. Configured **IAM roles** for secure access control, increasing data processing scalability by **25%** and decreasing infrastructure expenses by **40%**.
- Built a robust **MLOps** pipeline for model retraining, monitoring, and deployment. **Implemented CI/CD principles** using **AWS services (SageMaker, CloudWatch, Lambda)** to automate model deployment and track performance. Maintained high predictive model accuracy over time, ensuring reliable energy optimization without manual intervention. Authored technical documentation for **MLOps pipelines** and **cloud infrastructure** to support team efficiency and knowledge transfer.

Software Engineer Intern, G-Think Inventors

June '19 - Apr '20

- **Created scalable and reliable** data engineering pipelines for **preprocessing** millions of daily data points. **Cleaned, transformed, and validated** high-volume time-series data using **Python (Pandas, NumPy)**, applying custom methods for missing value imputation and outlier detection.
- Ensured **data availability and quality**, reducing processing time by **30%** and facilitating prompt downstream analysis for energy-saving features. **Collaborated** with cross-functional teams to integrate energy management features into smart home systems.

PROJECTS

Research Tool | LLM, Python, LangChain, Gen AI, RAG

- **Developed** an **LLM-integrated web application** using a **RAG model (Python, LangChain, OpenAI, Streamlit)** to facilitate efficient research from up to **25** web articles per query, reducing manual effort by **70%**. Containerized the application using Docker and hosted it on GCP with **99.9% uptime**.
- **Converted** articles and prompts into chunks, embedded them numerically, and stored in **vector database (FAISS)**, improving retrieval speed by **3x**. Identified relevant chunks and processed them with an LLM, reducing **OpenAI API** costs by **40%** while maintaining high response accuracy.

Restaurant Name and Menu Items Generator using LLM | Python, LLM, Gen Ai, Streamlit

- **Developed** a **Python-based text generation model** capable of generating over **30** unique restaurant names at a time and diverse menu items.
- **Implemented** character-level text generation using **deep learning techniques**, showcasing understanding of neural networks and sequential data processing with **95%** syntactic validity.

House Affordability and Price Prediction | Python, MySQL, Power Bi, Flask

- **Developed** a **data-driven analytics platform** leveraging Zillow's public data to analyze real estate trends and predict housing prices. Features tools for market forecasting, and predictive modeling using **Power BI, Flask**, and **Scikit-learn**, improving forecasting accuracy by **45%**.
- **Stored user and house data** in a **MySQL database**, with functionality for sellers to post properties and manage applications, and for buyers to browse listings and apply directly. Reduced browsing time by **40%**.

TECHNICAL SKILLS

Programming and Tools: Python, Bash, C++, Java, JavaScript, Node.js, TypeScript, React, CSS, HTML, Spring Boot, Postman, Docker, Terraform

ML/AI and Data Science: Scikit-learn, Pandas, NumPy, PyTouch, Matplotlib, Generative AI (Gen AI), LLM, RAG, NLP (Natural Language Processing), TensorFlow, Feature Engineering, Data Engineering, Algorithm Development, Model Evaluation, Deep Learning, Data Integration, Data Mining

Database / Operating Systems: FAISS, PostgreSQL, MongoDB, MySQL, Linux, Windows

Cloud Technologies / Protocols: Amazon Web Services (AWS), Google Cloud Platform (GCP), Azure, MQTT, Fast API, HTTP, TCP/IP

Development and Coding Practices: CI/CD, Automation, TDD, JIRA, Git, GitHub, Design Patterns, Agile, SOLID, Code Reviews

EDUCATION

Masters in Big Data Analytics – University of Central Missouri, Missouri, United States | 3.4/4.0

Aug '23 - May '25

Relevant Coursework: Machine Learning and Deep Learning, Big Data Architecture, Data Analytics, Business Intelligence, Data Resource Management

Bachelor's in Computer Science and Engineering – Sreyas Institute of Engineering and technology, Hyderabad, India | 8.0/10

July '16 - Apr '20

Relevant Coursework: Distributed Systems, Operating Systems, Networking Fundamentals, Database Management, Virtualization, Project Management

CERTIFICATION

NVIDIA-Certified Associate Generative AI LLMs (NCA-GENL)

July '25

Cisco Certified Network Associate – Routing and Switching: Introduction to Networks

June '18

Python Programming – Tvashtaa Data Solutions

Sept '17

PUBLICATION

Vardhan M.K., Nabi S.A. (2021) "NavRobotVac: A Navigational Robotic Vacuum Cleaner Using Raspberry Pi and Python," Springer
(https://link.springer.com/chapter/10.1007/978-981-16-1502-3_17)

Oct '20