

Akshitha Kumbam

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EXPERIENCE

AMAZON WEB SERVICES

Solutions architect intern ML | Python, LLMs, AWS, Prompt engineering, GenAI, Kubernetes

Cupertino, California

May 2024 - Aug 2024

- Built an AI-powered code generation tool leveraging AWS Bedrock and Streamlit, reducing manual effort through automated code validation and optimization using EC2.
- Guaranteed code correctness using iterative feedback loops, chain-thought prompt engineering, and dynamic prompts based on inputs.
- Integrated a Retrieval-Augmented Generation (RAG) system using AWS Kendra to retrieve, rank, and leverage relevant documents for precise and context-specific response generation.

ELTROPY INC

AI Backend Intern | Encoder-Decoder models, FastAPI, JavaScript, Docker

Milpitas, California

Feb 2024 - May 2024

- Developed a custom function to compute similarity indices of phrases using sentence embeddings. Allows the detection and resolution of conflicting intents in the chatbot's backend database, hence enhancing user experience.
- Acquired expertise in transformer models (LLaMA, Mixtral, GPT) and text vectorization/embedding, enabling effective text data representation in ML models.

Data Engineer | SQL, Cloud - AWS, Airflow, Redshift

Sep 2022 - Jul 2023

- Built pipelines to automate periodic data ingestion to Data lake using cloud technologies (ETL, Airflow, Athena, Lambda, S3, CloudWatch, Databrew).
- Created monetizable analytics dashboards on AWS Quicksight.

BLOGGER - [Medium blog](#)

Jan 2024 - Present

Published articles on AI/ML topics, including transformer architecture, large language models, retrieval-augmented generation, and Guardrails.

WALMART LABS

Data Science Intern | Pandas, Scikit-learn, Tableau, NumPy, Matplotlib, Seaborn, Data visualization

Bangalore, India

Jan 2020 - Aug 2020

- Uncovered high-value customer segments by applying K-means clustering to location and demographic data, identifying a key group with a 32% higher purchase frequency.
- Visualized market trends and attribute relationships using Tableau, providing actionable insights for business stakeholders.

EDUCATION

2023 - Expected 2025

Master of Data Science, New York University, Center for Data Science (CGPA - 3.8)

Bachelor of Mechanical Engineering, Minor in Data Science, Birla Institute of Technology and Science (BITS) (CGPA - 8.9)

SKILLS AND COURSES

Technical Machine learning (ML), Deep learning, Natural language processing (NLP), Data structures and algorithms, Computer Science, Computer vision, Artificial Intelligence (AI), Multimodal learning, Object-oriented Programming, Data mining, Operating systems

Languages Python, Java, C++, SQL,

Tools AWS, Git, Apache Kafka, Hadoop, MapReduce, MySQL, Apache Spark

PROJECTS

Seq2Seq Neural Machine Translation | PyTorch, Keras, BERT, WordNet

- Fine-tuned and improved attention-based Seq2Seq Neural Machine Translation model for Czech-to-English translation, using subwording, layer normalization, and beam search. Combined and cleaned multiple datasets for robust training.

Facial emotion recognition | OpenCV, TensorFlow, NumPy, ResNet

- Developed a deep learning model that recognizes and classifies human emotions from facial expressions in real-time.
- Utilized a Convolutional Neural Network (CNN) architecture with multi-task learning and transfer learning to improve accuracy.

PUBLICATIONS AND AWARDS

- LIDS : Lightweight Dynamic Scheduling Technique for 6G-enabled Massive LoRa based IoT Systems. Published by IEEE GLOBECOM 2022 conference, Rio de Janeiro, Brazil - Dec 4, 2022.
- Active member of Association for Computing Machinery-Women (ACM-W) ([Link to my page](#)). ACM-W award for attendance at IEEE GLOBECOM 2022 sponsored by Google through ACM-W scholarship program.