

# Akshitha Kumbam

+1 (650) 405-9026 • New York City, New York

[ak11071@nyu.edu](mailto:ak11071@nyu.edu) • [LinkedIn](#) • [Medium blog - Akshitha Kumbam](#)

## EDUCATION

Master of Data Science, New York University, Center for Data Science

Aug 2023 - May 2025

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

Aug 2018 - May 2022

## EXPERIENCE

### AMAZON WEB SERVICES

Solutions architect intern ML | **AWS, Streamlit, LLM**, Prompt engineering, Linux, RAG, GenAI

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 | **Transformers, FastAPI**, JavaScript, **Docker**, Kubernetes, Encoder-Decoder models

Milpitas, California

Feb 2024 - May 2024

- Developed a deep learning pipeline using BERT and SentenceTransformers to quantify semantic similarity between sentences using embeddings. Fine-tuned SBERT for improved performance, utilizing cosine similarity and error metrics (MSE, Pearson) to validate model accuracy.
- Acquired expertise in transformer models (LLaMA, Mixtral, GPT) and text vectorization/embedding techniques, enabling effective text data representation in ML models.

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

Sep 2022 - Jul 2023

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

### BLOGGER - [Medium blog](#), [Substack blog](#)

Jan 2024 - Present

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

Currently doing [AI inshort series](#).

### 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, identifying a key group with a higher purchase frequency.
- Visualized market trends and attribute relationships using Tableau, providing actionable insights for business stakeholders.

## 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, C

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

## PROJECTS - [Finetuned gemma](#), [Custom-curated dataset](#)

Finetuning Gemma-2-9B - Unlocking Creative Storytelling | PyTorch, **Unsloth**, **LoRA**, GPU optimization

- Fine-tuned Gemma 2 to build a storytelling model, generating engaging and child-friendly tales from user-provided opening lines.
- Developed a customized dataset(1k) with AI-generated one-liners for short stories, ensuring age-appropriate themes.

Seq2Seq Neural Machine Translation | **PyTorch**, Docker, Hugging Face **Transformers**, RESTful API

- Fine-tuned T5-base model using learning rate scheduling and gradient accumulation to achieve BLEU score: 53.2.
- Designed a data pipeline to preprocess French-English sentence pairs from diverse datasets (TED Talks, WMT14).

## 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.