Harshita Dooja Poojary
hpoojary@usc.edu | +1(213)-234-8695 | harshitapoojary

Analytical and passionate technologist with 4.5 years of experience running end-to-end deep learning experiments, building Python tools to accelerate scientific workflows, and scaling AI systems in small, autonomous research teams.

EDUCATION

University of Southern California, Los Angeles   *May 2025*

Master's in Computer Science (Coursework-*Algorithms, Deep Learning, Artificial Intelligence, Machine Learning, Natural Language Processing*) **GPA: 3.81**

University of Mumbai, India

Bachelor's in Computer Science Engineering (Coursework- *Software Engineering, Distributed Databases, Web Technologies*) **GPA: 3.83**

SKILLS

Core Programming Languages: Python

Other Programming Languages: JavaScript, C++, Java, HTML/CSS

Frameworks & Libraries: Node.js, AngularJs, PySpark, PyTorch, Keras, TensorFlow, OpenCV, Streamlit

Databases: MongoDB, Redis, MySQL, ElasticSearch, Milvus, Hadoop, DynamoDB

Tools & Platforms: Docker, Kubernetes, AWS, Azure, Jenkins, Git, JIRA, Postman, Swagger, PowerBI, Tableau, Google Analytics

WORK EXPERIENCE

Data Science Intern   *Jun 2024 – Aug 2024*

Zero-True (Remote)   New York, USA

- Conducted comprehensive data analysis on **10 distinct datasets** using **ML** and **NLP techniques**, employing the visual components of Zero-True to enhance client experience by enabling dynamic data filtering and visualization.
- **Collaborated with the founders** to implement **5 additional UI components** from Vuetify, contributing to the development of a seamless Python and SQL integration for creating interactive reports and dashboards.
- **Optimized GPU processing for accelerated ML inference** within Zero-True notebooks, enabling seamless integration and efficient deployment of computationally intensive applications under restricted resources.

Student Researcher   *Jan 2024 – Aug 2024*

University of Southern California   Los Angeles, USA

- Under **Prof. Seon Kim**, analyzed **object detection and classification models** (YOLOv5/YOLOv8) on 10k Streetview imagery from Google Images and in-house dataset using **data mining** for tent detection and counting, optimizing performance in **noisy urban conditions** using geospatial metadata.
- **Executed geospatial analysis at scale** by coding grid-based segmentation logic to quantify encampment density across **502.7 square miles** of Los Angeles, generating multi-intensity **heatmaps** using latitude-longitude clustering **across five intensity levels**.

Machine Learning Engineer   *Dec 2021 – Jul 2023*

Reliance Jio   Mumbai, India

- **Engineered and optimized** RetinaFace detection models using **TensorRT FP16** precision on **T4 and A100 GPUs** using **C++ and Python**, reducing face registration time by **40%** and enabling real-time inference at scale across Jio's parallel distributed clusters.
- Automated end-to-end **CI/CD pipelines** for three ML systems—JioFace, Video Motion Detection, Number Plate Recognition—reducing deployment time by **50%** and supporting rapid model iteration.
- **Developed** a **spoof detection system** by analyzing ResNet32, Central Difference Convolution (CDCN) techniques to detect 2D attacks via depth analysis, achieving **90% accuracy** across **20+ sites** using in-house video-derived datasets and **low-latency deep learning architecture**.
- Led a team of interns to **curate spoof detection datasets**, conduct model evaluation experiments, and establish **reproducibility benchmarks** to validate model integrity and deployment readiness at scale.

Software Engineer   *Jun 2019 – Dec 2021*

Reliance Jio   Mumbai, India

- **As a part of the world's largest mobile data company, collaborated** cross-functionally to build scalable microservices and APIs serving personalized ML-driven recommendations for 100M+ users, enhancing engagement by 20% using large-scale LLM models.
- **Designed large-scale data ingestion pipelines**, integrating 250+ newspapers, 150+ live channels, and 800+ magazines across platforms, **scaling content delivery** in 13 languages and increasing the user base by **50%.**
- **Augmented system observability** and **SLA adherence** by implementing a full-stack monitoring suite using **Prometheus, Grafana, and Kibana**, introducing memory profiling and automated alerting that improved API availability and reliability by **20%.**
- **Developed low-latency, secure VoIP backend system** for JioGate, deployed successfully across 20+ communities, supporting reliable emergency communication across 20+ gated communities.

Software Engineer   *Jan 2019 – Jun 2019*

TaksyKraft (Remote)   Hyderabad, India

- Built scalable **data pipelines** and **visualizations** for **10 large-scale clients** in collaboration with analysts and engineering teams.
- Designed and deployed **APIs** to deliver **real-time engagement predictions** and **ROI metrics**, enabling 10+ broadcasters and advertisers to optimize ad targeting.

PROJECTS

Unified Semantic Space for Multimodal Retrieval (PyTorch, Python, VectorDB)

- Analyzed multimodal LLMs, including **LLama-3,** to answer questions over frames for MIT videos and using **LangDB** Vector Databases to store frame embeddings and retrieve user queries.
- Implementing a user interface using **Streamlit** to integrate ML models, enabling users to upload videos and query the system interactively.

Analyzing NLP techniques on Low-Resource Languages(PyTorch)

- **Conducted idiom classification and metaphor classification** in the low-resource **Konkani** language using BERT-based transformers, investigating performance-preserving **attention head pruning.**

Comparison of Model Performance with Knowledge Distillation and Quantization (PyTorch, Python)

- **Fine-tuned LLama-3 model** with 4-bit quantization using **logit distillation** with LoRa (Low-Rank Adaptation).
- Computed benchmark against **GSM8k dataset with 8-shot learning** to analyze the performance against the original model with 8B parameters.