

DIVYESH MISTRY

Los Angeles, USA | divyeshmistry@gmail.com | (213) 696-2202 | <https://github.com/divyesh0406> | Portfolio

EDUCATION

Master of Science in Computer Science - Data Science

University of Southern California | 3.75 GPA

Aug 2024 - May 2026

Los Angeles, California

Bachelor of Engineering in Computer Engineering (Minors in Data Science)

University of Mumbai | 9.00 CGPA

Aug 2021 - June 2024

Mumbai, India

WORK EXPERIENCE

Data Science Intern | ServiceLink

June 2025 - Aug 2025

- Accomplished a 38% accuracy improvement in post-close document completeness analysis by building a custom dataset of 4,000+ images with metadata and fine-tuning a multimodal LLM (google/gemma-3-4b-it) using JSON prompting, LoRA, and PEFT, decreasing GPU and memory usage on resource-constrained hardware.
- Achieved optimal model architecture selection by benchmarking 10+ open-source vision-language models, evaluating accuracy, output quality, inference speed, and model size.
- Cut down model size by 70%, via 4-bit quantization leveraging LLaMA.cpp.
- Delivered real-time, offline document completeness analysis with 100% on-device data privacy on 3+ platforms through a cross-platform React Native app combining a custom-trained, quantized vision-language model via llama.rn for on-device AI inference.

Research Assistant | USC Ming Hsieh Department of Electrical and Computer Engineering

Dec 2024 - May 2025

- Accelerated a Python-based COVID-19 time-series simulation by 25% by identifying computational bottlenecks and re-engineering core epidemiological modules with Cython.
- Engineered the forecasting architecture to support parallel processing, enabling the efficient, simultaneous execution of projections for multiple states/regions.

Research Assistant | USC Keck School of Medicine

Sept 2024 - Dec 2024

- Identified Structural Variants in Human DNA, aligned oncogene sequences with whole human genome using Sniffles2, enhancing understanding of genetic variations. Translated gene sequences to Amino acid sequences and annotated mutations; identified mutation types with reference tables.

Data Analyst Intern | OziBook

Aug 2023 - Oct 2023

- Led a team of 30 interns to enhance Lead Generation process by generating a database for potential clients, securing 2 new clients. Collaborated with Business and Research Analyst Teams to analyze over 900 potential client profiles and shortlist clients suitable for company's services with Tableau and Pandas for Data Analysis.
- Designed Power BI dashboards to evaluate company's position relative to its competitors.

PROJECTS

AI-Powered Academic Research Assistant | Code

- Implemented NLP techniques, 'Fitz' and 'PyPDF2' libraries to extract data and images from research papers.
- Applied LexRank algorithm to identify Key Takeaways, reducing time spent manually by 90%.
- Fine-tuned LongT5 Transformer model and integrated it to summarize research papers. Improved Summary generation time by 75%. Researched over 7 Neural Network Data Models to analyze best fit with given memory constraints.

Choose Your Own Adventure Game

- Engineered real-time data injection pipeline into GPT-3 on Cassandra Astra, enabling dynamic, personalized gameplay through contextual AI-driven responses to player choices.
- Optimized game performance by utilizing vector databases for efficient data storage and retrieval. Leveraging Cassandra chat message history and conversation buffer memory for efficient data handling.
- Showcased prompt templates to dynamically inject variables into AI prompts, fostering customized interactions.

Sentiment Analysis

- Devised a sentiment analysis model deploying BERT (Bidirectional Encoder Representations from Transformers) to accurately predict sentiment labels for given text data, classifying as 'Neutral', 'Positive', or 'Negative', and achieving 97% model accuracy. Connected system with a Flask interface to provide GUI for Machine Learning model.

Recipe App Using Flutter

- Developed a dynamic and user-friendly Recipe App operating on Flutter framework. Application's primary goal is to provide users a convenient platform to discover, order ingredients, and share favorite recipes seamlessly.
- Created an intuitive recipe upload and editing feature, allowing users to contribute recipes to app's database.
- Integrated RazorPay as a payment gateway solution, enabling users to purchase required ingredients.

CERTIFICATIONS

- | | |
|---|------|
| Data Visualization and Communication with Tableau by Coursera | 2023 |
| Data Analysis with R Programming by Coursera | 2023 |
| React Native - The Practical Guide by Udemy | 2023 |
| Flutter & Dart - The Complete Guide by Udemy | 2022 |

SKILLS

Tableau | C# | C++ | Statistics | Flutter | Firebase | Python | Data Mining | Java | MySQL | NLP | ETL | Spark | Scala | Fine-Tuning