

# Rhea Pandita

Los Angeles, California, US

Portfolio: [rp-1106.github.io](https://rp-1106.github.io)

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## EDUCATION

### University of Southern California

Master of Science in Computer Science

Aug 2025-May 2027

GPA: 3.5/4

- Courses: Analysis of Algorithms, Database Systems, Machine Learning, Information Retrieval and Web Search Engines

### Shiv Nadar University Chennai

Bachelor of Technology in Artificial Intelligence & Data Science

Sep 2021-July 2025

CGPA: 9.031/10

- Relevant Courses: Big Data Analysis, Artificial Intelligence, Machine Learning Techniques, Natural Language Processing, Deep Learning, Reinforcement Learning, Linear Algebra, Statistical Inference, Data Mining, Foundations of Data Science

## SKILLS

**Languages:** Python, C, Java, JavaScript, HTML, CSS, SQL, JupyterNotebook

**AI Tech:** Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Transformers

**Frameworks :** React, Node.js, Hadoop, PySpark, Flask, Tableau, HuggingFace Transformers

**Libraries :** Pandas, Numpy, Matplotlib, TensorFlow, PyTorch, Keras, ScikitLearn, XGBoost, SpaCy, NLTK

## EXPERIENCE

### USC Center for the Neuroscience of Embodied Cognition A-Z Lab

Graduate Research Assistant

Aug 2025-Present

Los Angeles, CA, USA

- Addressing the challenge of evaluating LLMs on **causal and predictive reasoning** over human-action videos.
- Annotated a **point-light human-action video dataset** and created an **augmented supervision dataset** with structured summaries, behavior labels, and causal/future-action hypotheses.
- Plan a pipeline to **benchmark LLMs** on these causal and predictive reasoning tasks.

### KPIT Technologies

Trainee

Jun 2024-Aug 2024

Bangalore, Karnataka, India

- Parsed IGES and STEP CAD files using Python, **extracting structured geometric parameters for downstream analysis** and improving data readiness for CAD automation.
- Developed Python algorithms to **classify & map 2D shapes to 3D counterparts**, enabling scalable parameter editing

### KPIT Technologies

Trainee

May 2023-Aug 2023

Bangalore, Karnataka, India

- Implemented **Stable Diffusion text-to-image pipeline** for car design, cutting sketch-to-3D from **months to weeks**.
- Built **image-to-3D mesh reconstruction workflow**, outputting .obj models for automotive prototyping.

## PROJECTS

### AI-Assisted Personal Finance Management System

May 2024-Apr 2025

- Developed two financial chatbots leveraging Mistral Saba 24B via GROQ API on **4,530 transactions**.
- Iteratively refined prompts by curating a **330 question–SQL** document, improving LLM transactional reasoning accuracy
- Applied **RAG-based grounding** to the document chatbot, **reducing response time by 81% and memory usage by 33%** against OllamaLLM Mistral.
- SQL chatbot achieved **faithfulness 1.0**, **relevance 0.872** and **89% faster responses** against OllamaLLM Mistral using **RAGAS module**.
- Tech Stack: Python, RAG, LLM, HuggingFace Embeddings

### Wordle with Hints

Jan 2024-Apr 2024

- Developed a Wordle game using **BERT**, **KeyBERT**, and **DistilBERT** embeddings to generate contextualised hints
- Applied **embedding similarity and clustering** to rank candidate words based on semantic relevance
- Evaluated contextual embeddings to understand semantic relationships and keyword extraction behavior
- Tech Stack: Python, HuggingFace Transformers

## PUBLICATIONS

T. R. Althi, V. Kothamachu, R. Pandita, "Accelerating Automotive Design: Harnessing AI Models for Efficient 3D Design and Development of Automobile Systems and Subsystems"

2023 IEEE International Transportation Electrification Conference (ITEC-India), Chennai, India, 2023, pp. 1-5, doi: 10.1109/ITEC-India59098.2023.10471378