VEERARAJU ELLURU

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Education

Indian Institute of Technology Jodhpur **May 2026**
Bachelor of Technology in Computer Science and Engineering CGPA: 9.27/10

Relevant Coursework: Data Structures & Algorithms, Design and Analysis of Algorithms, Pattern Recognition & Machine Learning (PRML), Computer Vision, 3D Shape Analysis, Operating Systems, Database Systems

Skills

Languages: Python, C, C++ | SQL | HTML, CSS, JavaScript
Frameworks and Tools: PyTorch | HuggingFace, wandb, multi-gpu training | Django | AWS

Experience

Research Intern, TAILS, Thoughtworks, Chicago, IL (Remote) **May 2025 - Present**
- **First** intern cohort for Thoughtworks AI Labs (**TAILS**). Research on the **Fine-grained Incompleteness Evaluation** of Textual **Summarization** tasks across Small and Large Language Models.
- Co-development and evaluation of **Self-Attention via Lie-Algebraic Flows** for textual summarization.
- **First-authoring** two papers.

Research Project Assistant, University of California, Riverside, CA (Remote) **May 2025 - Present**
- Research on the Intersection of Mechanistic Interpretability and Machine Unlearning

Research Assistant, Image Analytics and Biometrics Lab, CSE Dept, IITJ **Dec. 2024 - Present**
- Research on privacy-respecting multimodal systems, based on Machine Unlearning
- One representative work accepted to **U&ME Workshop**, **ICCV,** 2025.

Research Intern (REU), University of Illinois Urbana-Champaign, Champaign, IL **Summer 2024**
- **Developed Self-Supervised Learning-based Foundation Models for** Livestock Image Segmentation pipelines leveraging non-contrastive learning algorithms like Bootstrap Your Own Latent. Generated robust and precise cattle masks for large-scale **out-of-distribution** datasets via Supervised Fine-Tuning.
- Achieved **SoTA** on the data-specific segmentation - a **6%** improvement in mean Jaccard scores on large-scale cross-species datasets, at **only 2-5% labeled data** during SFT, hence debunking Supervised Learning-based segmentation algorithms.

Projects

Research Project: Flow-based generative models for High Energy Physics, IITJ/CERN **Summer 2025**
- Developing a flow-based, diffeomorphic, generative model for simulating nuclear particle showers by utilizing a Probabilistic Variational Autoencoder coupled with OpenAI's Glow framework.

Project: Multi-view 3D scene reconstruction, Course: Computer Vision | GitHub, HF **Apr. 2025**
- **Evaluated** various scene-reconstruction methods such as NeRFs, GANs, Gaussian Splattings, and classical Structure-from-Motion (SfM) and Multi-view Stereo (MVS) techniques.
- **Benchmarked** above models across a plethora of 2D-3D datasets to illustrate the best performance.
- Deployed a **front-end** application using Streamlit to support easy tinkering.

Project: Multi-label classification on the LFW dataset, Course: PRML | GitHub **Mar. 2024**
- **Evaluated** feature extraction methods - HOG, LBP, CNNs, and their combinations for improving face recognition accuracy.
- **Benchmarked** classifiers - KNN, MLPs, Naïve Bayes, SVM, XGBoost, on the **LFW dataset**.
- **Developed** a face recognition pipeline using PyTorch and Streamlit for easier usability and deployment.

Leadership Activities

Introduction to Computer Science Teaching Assistant, IITJ CSE Dept **Spring 2025**