

VEERARAJU ELLURU

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Education

Indian Institute of Technology, Jodhpur

Bachelor of Technology in Computer Science and Engineering

May 2026

GPA: 9.25/10

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, SQL | HTML, CSS, JavaScript

Frameworks and Tools: PyTorch (well-versed), TensorFlow | HuggingFace, wandb, Django, git, MySQL | AWS

Experience and Projects

Research Assistant, Image Analytics and Biometrics Lab, CSE Dept., IITJ

Oct. 2024 - Present

- Research on privacy-respecting multimodal systems, based on Machine Unlearning

Research Intern, University of Illinois Urbana-Champaign, Champaign, IL

Summer 2024

- Developed** two Image Segmentation pipelines leveraging few-shot, **self-supervised algorithms** on general cattle datasets, utilizing non-contrastive learning algorithms like Bootstrap Your Own Latent, and used generative modeling to generate precise masks for out-of-distribution cattle, at **scale**.
- Stitched a **parallel regression network** for several downstream tasks like body weight and feed intake prediction.
- Achieved **SoTA** on the data-specific segmentation - a **6%** improvement in mean Jaccard scores, against Supervised models on the cross-species proprietary datasets, at **only 2-5% labeled data**.
- Trained using NVIDIA A6000s, First-author [paper](#) accepted at the **USPLF Conf. '25**.

Machine Learning and Data Analyst, Fluxgen Technologies, Bengaluru, IN

Summer 2023

- Optimized** raw data from a live dashboard for analysis, enabling EDA and model training.
- Improved **anomaly detection acc.** using unsupervised algorithms - **Isolation Forest**, and **OC-SVM**.
- Developed** data-driven water-level optimization insights, influencing Tata Steel and other clients.
- Through anomaly detection and optimization, water usage was reduced by **14%** month-over-month at 3 steel plants.

Research Project: Flow-based generative models for High Energy Physics, IITJ/CERN

Dec. 2024 - Present

- Developed flow-based generative models for simulating nuclear particle showers by utilizing a Stochastic Variational Autoencoder coupled with OpenAI's Glow framework.

Project: Multi-view scene reconstruction, Course: Computer Vision

Nov. 2024 - Present

- Evaluated** various scene-reconstruction methods such as NeRFs, GANs, Gaussian Splattings, and classical Structure-from-Motion (SfM) techniques.
- Benchmarked** above models across a plethora of 3D datasets to illustrate the best performing model.
- Deployed a **front-end** application using Streamlit to support easy tinkering.

Project: Multi-label classification on the LFW dataset, Course: PRML

Mar. 2024 - Apr. 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**, optimizing model performance.
- Developed** a face recognition pipeline using PyTorch and Streamlit, enhancing usability and deployment.

Leadership Activities

Introduction to Computer Science Teaching Assistant, IITJ CSE Dept

Spring 2025