

Anurag Pradhan

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Summary

B.Tech second-year student studying in VIT Chennai with a strong foundation in machine learning and deep learning. Possesses notable knowledge in deep learning, especially in computer vision. Eager to apply theoretical insights into practical applications. Aiming to contribute to innovative projects that leverage artificial intelligence technologies.

Education

10th Standard | Sri Chaitanya Techno School | Visakhapatnam

Duration: JUNE 2020 – AUGUST 2021

Secured an aggregate of 93.44%

Intermediate | Sri Venkateswara Jr. College | Visakhapatnam

Duration: OCT 2021 – JUNE 2023

Secured an aggregate of 88.4% in my 12th standard

Bachelor of Technology in Computer Science (AI & ML) | Vellore Institute of Technology | Chennai

Duration: AUGUST 2023 – JULY 2027

Secured a CGPA of 7.74 till my 4th semester

Skills

Programming Languages:

Proficient In: Python, C/C++

Deep Learning:

Proficient In: Deep Neural Networks, CNN, LSTM, GRU, Image Processing, Object detection, Vision Transformers, Computer Vision, LLM

Frameworks: PyTorch, YOLOv5/v8, OpenCV, Albumentations, Transformers(Hugging Face), Langchain, wandb, Llama, BEiT, BLIP

Projects

- **Video Stabilization Using Kalman Filter**

Implemented motion stabilization using optical flow and affine transformations. Applied Kalman filtering for smooth motion correction and optimized transformations for video frame stabilization.

Github Repository Link: <https://github.com/anurag965/Video-Stabilization>

- **Exoplanet Habitability Prediction**

Built a machine learning pipeline using Decision Tree, k-NN, and Gradient Boosting to classify exoplanet habitability. Applied data preprocessing (MICE, feature selection, SMOTEENN) and optimized with GridSearchCV. Used Matplotlib, Seaborn, and Plotly for visualization.

Github Repository Link: <https://github.com/anurag965/planet-habitability-predictor>

- **Liver Disease Prediction**

Developed a YOLOv5-based deep learning model for liver disease detection. Integrated Stable Loss, data augmentation, and Adam optimizer. Evaluated performance with accuracy, precision, recall, and F1-score, and enhanced medical visualization with heatmaps.

Github Repository Link: https://github.com/anurag965/Liver_disease_prediction

- **Brain Tumor Segmentation**

Built a semantic segmentation pipeline using a BEiT-based transformer model with attention-driven decoding and skip connections. Handled YOLO/image-based masks, applied advanced augmentations (Albumentations), and used a combined CrossEntropy-Dice loss with class weighting. Trained on GPU with OneCycleLR scheduler and visualized predictions with contour overlays for clinical interpretability.

Github Repository Link: <https://github.com/anurag965/Brain-Tumor-Segmentation>

- **JanaSathi: *Odia E-Governance Chatbot***

Built a bilingual Retrieval-Augmented Generation (RAG) chatbot for Odisha government schemes using OpenRouter-hosted LLMs. Embedded chunked PDF data using all-MiniLM-L6-v2, performed cosine similarity-based retrieval, and integrated a 49B instruction-tuned model (thedrummer/valkyrie-49b-v1) for English responses. Designed paragraph-wise translation to Odia using cohere/command-r-plus with strict output sanitization. Implemented PDF parsing with PyPDF2, advanced preprocessing via regex, and chunk overlap handling for context fidelity. Engineered system/user prompts for clarity, empathy, and structured output. Supported schema: scheme overview, eligibility, benefits, application steps, and required documents. Architected as a modular Python class with streaming input for live query handling. Secured 2nd place at AMD-sponsored **OdiaGenAI Hackathon 2025**, winning ₹20,000.

GitHub Repository: https://github.com/anurag965/OdiaGenAI_Hackathon