



Ansh Singh

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B. Tech

CSE Core

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EDUCATION

Vellore Institute of Technology

Expected 2027

B.Tech in Computer Science and Engineering

PROJECTS

Crop Disease Prediction

Sep 2025

Tools: Python, Tensorflow, CNN, Matplotlib

- Designed a high-accuracy deep learning system to detect crop diseases across several plant species using custom CNN architectures and ResNet-50 transfer learning, achieving **96% accuracy**.
- Streamlined pipelines tailored to individual plant types, leveraging data augmentation (rotation, flipping, scaling) to enhance generalizability and minimize bias.
- Delivered measurable performance improvements: **8% accuracy gain** over baseline CNN.

Breast Cancer Histopathology Classification (BreaKHis)

Jul 2025 – Aug 2025

Tools: PyTorch, Vision Transformer (ViT-Small), CUDA, Google Colab, NumPy, scikit-learn

- Built an end-to-end deep learning pipeline for classifying benign vs malignant breast cancer histopathology images using Vision Transformer (ViT-Small) models.
- Trained **independent models across four magnification levels (40X, 100X, 200X, 400X)** to evaluate robustness against varying microscopic resolutions.
- Achieved **99.24% average accuracy**, with peak performance of **99.50%** on 40X and 200X magnifications.
- Implemented automated model checkpointing and evaluation using precision, recall, F1-score, and confusion matrices.
- Designed the workflow to be **Google Colab-compatible**, leveraging GPU acceleration (CUDA) and seamless model export to Google Drive.

TECHNICAL SKILLS

Languages: Python, C, C++

Developer Tools: Git, FastAPI, Streamlit, Jupyter, VS Code, Postman

Frameworks: TensorFlow, LangChain, HuggingFace Transformers, scikit-learn, NumPy, Pandas, Matplotlib

Databases: ChromaDB, MongoDB, HuggingFace Hub

Coursework: Machine Learning, Deep Learning, Natural Language Processing, Data Visualization, Tensorflow, Retrieval-Augmented Generation (RAG), Data Structures Algorithms

ACHIEVEMENTS

- Solved 300+ algorithmic problems across LeetCode, Codeforces, and CodeChef.
- Achieved global ranks of 848 and 944 in LeetCode Biweekly Contests 159 and 162. respectively