SAUMYA DADU

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EDUCATION

Vellore Institute of Technology Bhopal, India
Bachelor of Technology in Computer Science Engineering Aug. 2022 – May 2026 (Expected)
CGPA: 8.51/10.0

Relevant Coursework: Data Structures and Algorithms, Operating Systems, Machine Learning, Object-Oriented Programming, Probability, Statistics and Reliability, Linear Algebra, Differential Equations

PROJECTS

Spatial Data Structure Performance Analysis for Restaurant Search
Python, Spatial Data Structures, Algorithm Optimization

- Implemented and analyzed **Linear Search, Grid-based Spatial Index, and R-tree** methods, achieving **85% faster query times** with R-tree implementation
- Created comprehensive test scenarios using **100+ randomized queries** across varying dataset sizes to evaluate efficiency
- Analyzed and documented specific performance metrics including time complexity, memory usage, and scalability for large-scale applications
- Developed technical documentation comparing implementation approaches and their practical applications in food delivery systems

SOS Emergency Response System
Python, YOLOv8, FastAPI, Computer Vision

- Deployed a **YOLOv8**-based (M/F) emergency model within the app for fast and accurate incident verification, reducing false positives by over 70%; contributed to fire data annotation and severity tagging based on intensity and spread.
- Performed comprehensive comparative analysis of different YOLO model variants (YOLOv5, YOLOv8) and object detection frameworks, documenting performance trade-offs and optimization strategies
- Optimized model performance through custom data preprocessing and achieving efficient inference times
- Incorporated robust error handling and logging systems for production-grade reliability

Apple Plant Disease Detection System
Python, TensorFlow, Convolutional Neural Networks (CNNs), Image Classification

- Engineered a CNN-based classification model identifying **10 common diseases** in apple plants with **82% accuracy**
- Trained the model on **18,000+ leaf images**, implementing data augmentation to expand the dataset **2x**
- Enhanced model accuracy through iterative testing and optimization of neural network architecture
- Accelerated disease identification process from **15 minutes to 2 minutes** per sample

TECHNICAL SKILLS

- Languages: C++, Python, SQL
- Frameworks & Libraries: OpenCV, TensorFlow (basic knowledge)
- Concepts: Data Structures and Algorithms, Machine Learning (Basic)
- Developer Tools: Git

COMPETITIVE PROGRAMMING

Codeforces

- Achieved **Pupil rank** with rating of **1213**, demonstrating advanced algorithmic implementation skills
- Implemented solutions for **200+ algorithmic challenges** focused on algorithms, data structures, and graph theory
- Competed in **15+ rated contests**, consistently improving performance under timed conditions

EXTRACURRICULAR ACTIVITIES

- Creator and Manager, Educational Instagram Account (@historifyworld_):
  - Transformed complex historical information into engaging infographics, reaching **10,000+ viewers**
  - Developed and implemented content strategy resulting in consistent audience growth and engagement

INTERESTS

Tech Trendy, Listening Music, Travelling, Puzzles, World History