

# AJJAY ADHITHYA V

Chennai, Tamil Nadu, India

[✉ ajayadi2005.aa@gmail.com](mailto:ajayadi2005.aa@gmail.com) [LinkedIn](#) [Github](#) [Portfolio Website](#)

## Education

### Vellore Institute of Technology

Bachelor of Technology in Computer Science and Engineering; **CGPA: 8.98** (till 6th Sem)

Chennai, India

2022 – 2026

## Experience

### Centre for Cyber Physical Systems (CCPS), VIT Chennai ↗

May 2025 – Aug 2025

Summer Research Intern

Chennai, India

- Conducted research on "Trade-Offs in AI-Text Detection," performing a comparative study of lightweight Transformer models including DistilBERT, ALBERT, and TinyBERT.
- Designed and implemented experiments to evaluate efficiency vs. performance trade-offs in detecting AI-generated text.
- Analyzed experimental data with faculty mentors, resulting in a research paper accepted for conference proceedings.

### InstiBuzz - Campus Brand of IIT Madras ↗

Aug 2024 – Oct 2024

Technical Team Intern - Full Stack

Chennai, India

- Contributed to the maintenance and optimization of the company website, ensuring smooth performance and scalability.
- Enhanced User Experience (UX) by implementing responsive design improvements and interactive features.
- Collaborated with the technical team to execute bug fixes, feature updates, and performance tuning.

## Publications

### Transforming Road Infrastructure Management: A Multimodal Road Quality Rating System ↗

Published in IEEE ICCMC 2025 | DOI: 10.1109/ICCMC65190.2025.11140874

### LoRaWAN-Based Blood Sugar Monitoring to Enhance Diabetes Management in Rural Areas ↗

Published in Zenodo Oct 2025 | DOI: 10.5281/ZENODO.17309300

### Trade-Offs in AI-Text Detection: A Comparative Study of DistilBERT, ALBERT, and TinyBERT ↗

Accepted at the International Conference on Sensing and Communication Networks (ICSCN 2025).

## Projects

### Automated Disaster Damage Assessment | Deep Learning, PyTorch, U-Net, ResNet-34 Aug 2025 – Nov 2025

- Developed a unified deep learning model (U-Net with ResNet-34 encoder) for simultaneous building localization and multi-class damage classification from satellite imagery.
- Innovated a custom "CombinedLoss" function with masking to focus classification loss solely on relevant building pixels, significantly improving training efficiency.
- Trained on the large-scale xBD benchmark dataset using stacked 6-channel tensors (pre- and post-disaster images).
- Achieved high quantitative performance with 0.9726 pixel accuracy in clear-sky scenarios, proving viability as a scalable alternative to inefficient two-stage systems.

### Adaptive Traffic Signal Optimization ↗ | Reinforcement Learning, Python, AI

Sep 2024 – Nov 2024

- Designed an AI-based traffic management system utilizing Reinforcement Learning (RL) algorithms for adaptive signal control.
- Incorporated predictive modeling to dynamically optimize signal timings, reducing congestion and average waiting times.
- Simulated complex urban traffic flow scenarios to validate efficiency improvements in throughput and delay reduction.

## Technical Skills

**Languages:** Python, Java, C/C++, SQL, JavaScript, HTML/CSS, MATLAB, R Studio

**Frameworks & Libraries:** React.js, Node.js, Tailwind CSS, PyTorch, MongoDB, TensorFlow, JUnit

**Tools & Platforms:** AWS, Git, GitHub, Linux, Android Studio, VS Code, Arduino, LTSpice, IoT