

# VIVIN RAKUL P

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*AI/ML enthusiast skilled in Deep Learning, Computer Vision, Federated Learning, and data pipelines, focused on building real-world intelligent models.*

## EDUCATION

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### **Amrita Vishwa Vidyapeetham**

Aug. 2023 – Aug. 2027

*Bachelor Of Technology, Computer Science and Engineering | CGPA: 7.19/10*  
Coimbatore, Tamil Nadu

### **Bharathi Vidyalaya School**

June. 2022 – May. 2023

*Higher Secondary (12th Grade) | Percentage: 91%*  
Erode, Tamil Nadu

## PROJECTS

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### **AI-Powered Malicious URL Detection | Python, Scikit-Learn, ML,Flask, React, GitHub Actions**

- Developed an end-to-end ML pipeline for classifying malicious URLs using classical ML + NLP models with feature engineering (domain, URL length, tokens).
- Implemented automated workflows using GitHub Actions and integrated frontend-backend deployment.
- Built a scalable system covering data preprocessing, model training, evaluation, and real-time prediction.

### **Plant Disease Detection | PyTorch, CNN, Python, OpenCV, PlantVillage Dataset, Flask API**

- Developed a CNN-based plant disease classifier using PyTorch and FastAI, trained on the PlantVillage dataset with torchvision-based preprocessing and augmentation.
- Built a Flask web application that allows users to upload leaf images and receive real-time AI predictions.
- Created a simple HTML interface for clear visualization of classification results through the Flask backend.

### **Intelligent Edge–Fog–Cloud Agriculture System | TensorFlow/Keras (MobileNetV2), Federated Learning, scikit-fuzzy**

- Developed an on-drone MobileNetV2 CNN for real-time pest detection at the edge, achieving 85% validation accuracy.
- Designed a Federated Learning pipeline in the cloud to aggregate drone model updates, producing a 98% accurate global model while preserving data privacy.
- Implemented a Fuzzy Inference System (scikit-fuzzy) at the MEC layer to interpret soil pH and output qualitative soil-health assessments.
- Simulated the full Edge–Fog–Cloud IIoT network using YAFS, analyzing latency, bandwidth, drone scheduling, anomaly detection, and system performance.

## TECHNICAL SKILLS

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Programming Languages: Python, C++, SQL (MySQL)

Web & Frameworks: React.js, Flask API, Streamlit

Frontend Tech: HTML, CSS

Machine Learning & AI: TensorFlow, PyTorch, scikit-learn, OpenCV, CNNs, Data Pipelines, ML Models

Tools: Git, GitHub Actions (CI/CD), Jupyter Notebook

## AWARDS & EXTRACURRICULAR

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- Shortlisted for the Prototype Phase in SmartCityX Hackathon 2025 for proposing an IoT-based Medication Reminder System.
- Participated in the Amrita Value Hackathon, contributing to idea development and problem-solving.
- Idea Shortlisted in MSME Idea Hackathon 5.0 for proposing a Smart Mice System.

## LANGUAGES

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- Tamil , English