

# PUNEETH JAIN S

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## Objective

A highly motivated, challenge-driven professional with a strong passion for Artificial Intelligence and Machine Learning. A collaborative team player and proactive problem solver who thrives in dynamic environments. Driven by a continuous hunger to learn and grow, I seek to apply my skills to build impactful, real-world solutions.

## Education

### New Horizon College of Engineering, Bengaluru

2023-2027

B.E. in Artificial Intelligence and Machine Learning

CGPA: 9.56 (till 5th semester)

### Vision PU College, Bengaluru

Pre-University (Class XII)

Percentage: 86%

## Technical Skills

- **Languages:** Python, C/C++, JavaScript
- **Databases:** MySQL, MongoDB, SQLite
- **Frameworks:** React, Node.js, Flask, FastAPI
- **ML and Data:** Pandas, NumPy, Scikit-learn, Matplotlib
- **Tools:** Git, Docker, Power BI, Postman, Neovim, VS Code

## Certifications

- Introduction to Machine Learning – NPTEL
- Data Science for Engineers – NPTEL
- Git Training – IIT Bombay
- Python: Mastering The Essentials – Scaler
- Fundamentals of Operating Systems – Scaler

## Projects

### StudyBuddy - AI-Based Multi-Agent EdTech Productivity Tool

- Built a multi-agent AI system using OCR and LLMs to generate personalized study content from handwritten notes.
- Implemented a full-stack architecture with Next.js and FastAPI for scalable real-time processing.
- Applied NLP vectorization and YouTube API integration for intelligent recommendations.
- Shipped a working prototype within a 36-hour hackathon.
- **Tech Stack:** Python, FastAPI, Next.js, OCR, LLMs, NLP, Vector Databases, YouTube API, Docker

### AI-Based Smart Fridge for Food Spoilage Detection and Inventory Management

- Built an AI-powered system to detect food items, track freshness, and alert users before spoilage using computer vision and ML.
- Trained a CNN model in TensorFlow with OpenCV-based image preprocessing, achieving ~90% classification accuracy.
- Integrated the model via a Flask API for real-time inference and automated spoilage alerts.
- Enabled continuous food monitoring to reduce household food waste through intelligent tracking.
- **Tech Stack:** Python, TensorFlow, OpenCV, Flask, CNN, NumPy, Pandas, Machine Learning

### IoT Device Authentication and Authorization System

- Built a secure IoT authentication system requiring devices to verify private-key ownership before MQTT communication.
- Implemented RSA/ECC-based key management and digital signature verification in Python.
- Deployed real-time publish-subscribe messaging using Mosquitto MQTT and containerized services using Docker.
- Achieved 100% device validation with strong spoofing resistance and low system overhead.
- **Tech Stack:** Python, MQTT, RSA, ECC Cryptography, FastAPI, PKI, Digital Signatures, Docker