Aron Preston Crasto

CrastoAron AronCrasto crastaaron184@gmail.com Portfolio

About

Computer Science Engineering student passionate about backend development, IoT, and building practical technology solutions through continuous learning and hands-on development.

Skills

Programming Languages: Java, Python, C
Frameworks: React, Next.js, Node.js, Flask, FastAPI, Flask, Arduino
Databases: MySQL, SQLite, MongoDB, PostgreSQL, Supabase
Tools: Git, Linux, Docker

Projects

ML-based Predictive Maintenance for Solar Panels `Apr-oct 2026`
Developed an ESP32-based IoT monitoring system to collect real-time environmental and electrical sensor data from solar panels at 2-second sampling intervals. Integrated MQTT, FastAPI, and InfluxDB for data transmission, storage, and processing. Developed Random Forest and XGBoost models to identify performance anomalies and detect potential panel degradation.

Agent of Record `Aug-Oct 2026`
Developed Agent-of-Record, a system for establishing cryptographic provenance and verifying AI agent instructions and autonomous actions. Implemented Proof-of-Intent generation, signed prompt verification using Ed25519 digital signatures, and a tamper-evident action provenance ledger. Built using Python, FastAPI, React, Vite, and Ed25519.

ML-powered Nutrition Tracking `Feb-Apr 2026`
Developed FoodSense, a cross-platform Flutter application that identifies food items from images and estimates their nutritional values using machine learning. Implemented image processing and nutritional tracking to help users monitor daily calorie and nutrient intake. Built using Flutter, Dart, Python, FastAPI, TensorFlow, OpenCV, and SQLite.

Parking Management System `Feb-Apr 2026`
Developed a RESTful backend API for a parking management system, implementing user authentication, parking slot management, and reservation handling. Designed a modular backend architecture with database persistence and JWT-based authentication. Built using Go, Gin, GORM, PostgreSQL, and REST APIs.

Education

St. Joseph Engineering College, Mangaluru 2023 – Present
B.E. Computer Science CGPA: **6.42**

Certifications

- Introduction To Industry 4.0 And Industrial Internet Of Things – NPTEL
- E-Business – NPTEL
- Generative AI with Large Language Models – Coursera