Raven Magbanua

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Masantol, Pampanga

Education

- B.S. in Computer Engineering from Pampanga State University — Status - Graduated
- Best Computer Engineering Design in Healthcare and Biomedical Engineering (Thesis, 2026)
- MRSP Robotics Competition 2nd Runner-Up (June, 2025)

Experience & Projects

IoT/AI Developer Intern at SATEZO OPC, Mabalacat, Pampanga — *March 2026 - May 2026*

- Developed a real-time hand-tracking lamp using Python, MediaPipe, and IoT hardware, enabling a robotic arm to follow the user's hand movements.
- Integrated a MediaPipe computer-vision pipeline in Python to detect hand positions from live camera input and generate movement commands.
- Programmed the Arduino in C++ and established UART communication with the Raspberry Pi to transmit commands and control the servo motors based on the detected hand position.

LeptoSight: An AI-Powered Kiosk for Early Detection of Leptospirosis Through Conjunctival Suffusion(Thesis) — *2026*

- Developed an AI-powered screening kiosk in Python using CustomTkinter, PostgreSQL, and Raspberry Pi 5 to manage patient records, temperature readings, symptom assessment, and eye-image risk classification.
- Trained and integrated Random Forest and YOLOv11 models in Python to analyze symptoms and conjunctival eye images, combining both confidence scores to generate a final risk assessment and screening recommendation.
- Programmed the kiosk workflow in Python and MicroPython, integrating an MLX90614 temperature sensor, IMX477 camera, and thermal printer for pre-diagnostic results.

MIRS: Masantol Incident Reporting System — *2026*

- Developed a real-time incident reporting platform in TypeScript using React, Express, Zustand, Drizzle ORM, and PostgreSQL enabling resident incident submission and administrators to manage reports, schedules, and tanod assignment management.
- Implemented real-time incident updates and notifications using TypeScript and Socket.IO, then integrated Semaphore SMS for OTP login verification and tanod alerts.
- Secured backend operations using CASL role-based authorization, Zod validation, and Upstash Redis rate limiting to protect sensitive routes and reduce abuse of public endpoint.

Kinetic.io API: Collaborative Task & Project Management API *2026*

- Developed a collaborative project-management REST API using Python, FastAPI, SQLAlchemy, and PostgreSQL, supporting projects, members, and multi-user task assignments.
- Implemented authentication in Python using JWT access tokens, rotating refresh tokens, HttpOnly cookies, CSRF protection, and Argon2 password hashing.
- Integrated Upstash Redis for rate limiting and used pytest, Ruff, mypy, and GitHub Actions to test, check, and maintain the Python backend