

# Marlon Martin

Pasig City, Philippines | [marlonadiguemartin548@gmail.com](mailto:marlonadiguemartin548@gmail.com) | +(63) 927 0166 200

Portfolio: [decimomartin.vercel.app](https://decimomartin.vercel.app) GitHub: [github.com/decimozs](https://github.com/decimozs) LinkedIn: [linkedin.com/in/decimomartin](https://linkedin.com/in/decimomartin)

## Projects

- Binspire** | *TypeScript, Python, IoT, MCP, PostgreSQL, AWS, HiveMQ, Nginx, Hono – [Live URL](#)* October 2023 – Present
- Engineered an **IoT-enabled waste management system** for Arcovia City that provides real-time trash bin monitoring, live tracking of collection activities, object detection, and QR-code based collection verification using Raspberry Pi, HC-SR04 sensors, MQTT, and WebSocket **optimizing collection routes, reducing operational costs, and improving environmental sustainability.**
  - Integrated **Binspire AI**, an **MCP (Model Context Protocol)**-powered intelligent chatbot supporting **OpenAI, Grok, LLaMA, and DeepSeek**, enabling multi-LLM data analysis, automated insights, and smarter decision-making for waste management operations.
  - Achieved **1st Runner Up** in the **IT Olympics – IoT Category**, competing against teams from **17+ top participating universities**.
- Hiraya** | *TypeScript, Lexical Analysis, AST, Syntax Parsing, Compiler Design* December 2024
- Designed and implemented a **Filipino-inspired programming language** to explore language design, syntax parsing, and compiler construction, demonstrating solid expertise in compiler architecture, abstract machine design, and programming language theory.
- Predicting Carbon Monoxide Levels** | *Python, UCI, Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn* July 2024
- Developed a **machine learning-powered CO prediction system** that analyzes environmental sensor data to forecast carbon monoxide levels with high accuracy, enabling **improved real-time air quality monitoring** and supporting **data-driven public health decision-making**.
- ART** | *Java, DSA, Time Complexity Analysis, Benchmarking, CLI* September 2023
- Implemented **execution time measurement, profiling and efficiency analysis** to evaluate **algorithmic complexity** in practice.
- Decimo AI** | *JavaScript, React, Vite, Express, Node.js, OpenAI* January 2023
- Built an interactive conversational AI solution, integrating **OpenAI's LLM** with a React frontend and Node.js/Express.js backend to facilitate **dynamic and natural language user interactions**.

## Skills

**Languages:** C++, Java, Python, Go, JavaScript, TypeScript, PHP, SQL

**Libraries & Frameworks:** Express.js, Hono.js, Node.js, FastAPI, Flask, Drizzle ORM, Prisma, tRPC

**Data & Machine Learning:** Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, OpenAI

**Tools & Platforms:** AWS, Digital Ocean, Git, GitHub, Linux, Bun, Firebase, MySQL, PostgreSQL, HiveMQ, Docker, Neovim, Raspberry Pi 4, Nginx

## Experience

- 14<sup>th</sup> IT Skills Olympics** | *Participant (Team Leader)* November 2025
- Led the Binspire project, an **IoT-enabled waste management system**, which won **1st Runner-Up** at the **14th IT Skills Olympics**, demonstrating real-time data monitoring, route optimization, and backend scalability.
- Software Developer** | *Freelance – Remote* June 2024 – Present
- Designed and implemented secure server-side RBAC middleware, enabling dynamic permission validation and **improving backend authorization reliability** across multiple services.
  - Developed and deployed a **scalable e-commerce platform** with TypeScript, Next.js, and Supabase, **focusing on API design, database modeling, and performant server-side operations**.
  - Built a **disaster management system** for a local Barangay using native PHP, optimizing backend data processing, incident logging, and emergency response workflows.
- CCS Academic Competition** | *Participant* February 2023
- Solved **3 out of 4** problem sets in my university Java programming contest during the first year.
- Open-Source** | *Developer & Contributor* January 2023 – Present
- Contributed to multiple community-driven projects on GitHub, enhancing open-source software.

## Education

- Pamantasan ng Lungsod ng Pasig** June 2022 – Present
- Bachelor of Science in Information Technology*
- Awards:**
- President's List Academic Achievement Awardee
  - Dean's List Academic Achievement Awardee
- Rizal High School** March 2020 – March 2022
- Information Communication and Technology - Programming*
- Awards (Case Study):**
- Overall – Best System Presenter
  - Overall – Best System Design
  - Overall – Best System Functionality
  - Overall – Best System