Marlon Martin

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Portfolio: decimomartin.vercel.app   **GitHub**: github.com/decimozs   **LinkedIn**: linkedin.com/in/decimomartin

Projects

Binspire | *TypeScript, Python, IoT, MCP, PostgreSQL, AWS, HiveMQ, Nginx, Hono* – **Live URL**   October 2023

- 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

14th 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