

Marlon Martin

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

Projects

- Haribon** | *TypeScript, Agentic AI, Deep Agents, LangGraph, Google GenAI, MCP, RAG* December 2025
- Developed an **autonomous civic AI agent** for BetterGov.ph leveraging **RAG pipelines, Deep Agents, and multi-step agentic workflows** to automate data aggregation, content summarization, and civic information retrieval while orchestrating complex tool use, web retrieval, and multi-step reasoning to deliver timely and reliable civic insights.
- 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, and reducing operational costs.
 - Improved the IoT module's startup time from several minutes to under 10 seconds by restructuring the boot sequence using async/await for non-blocking initialization and implementing threaded execution for independent hardware modules greatly enhancing system responsiveness, reliability, and operational uptime.
 - 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.

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, Google Gen AI, RAG, Deep Agents

Tools & Platforms: AWS, Digital Ocean, Git, GitHub, Linux, Bun, Firebase, MySQL, PostgreSQL, HiveMQ, Docker, Neovim, Raspberry Pi 4, Nginx, MCP (Model Context Protocol), LangChain, LangGraph

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
- 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

ICT – Programming

Awards (Case Study):

- Overall – Best System Presenter
- Overall – Best System Design
- Overall – Best System Functionality
- Overall – Best System