

# RODRIGO G. BARIEN III

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Enthusiastic engineering graduate with hands-on experience in microcontroller and software development as a freelance developer. Seeking a Software/Firmware Engineering role to apply my skills, drive innovation, and contribute to pioneering projects within a forward-thinking company.

## Education

### BACHELOR OF SCIENCE IN ELECTRONICS ENGINEERING (2024 | University of Saint Louis Tuguegarao)

- Major: Microcontrollers and Embedded Systems
- Minor: Digital Communications & Telecommunications
- Related coursework: Electronics, Computer Programming, Digital Signal Processing, Networking

### SECONDARY EDUCATION (2020 | Saint Paul University Philippines)

- Major: Science, Technology, Engineering, and Mathematics(STEM)

## Experience

### FREELANCE DEVELOPER (Upwork/Online | June 2023 – Present)

- I develop customized solutions using diverse programming languages, tech stacks, and frameworks for various projects for clients, dealing with hardware, software, and web related projects.
- I successfully completed total of 14 small to mid-sized projects while working for 5 clients in Upwork and other platform.

### IECEP ESC, Organizational President (Cagayan Valley, PH | August 2023 – June 2024)

- I led and coordinated numerous events and initiatives aimed at enhancing the academic and professional development of our members.
- I managed teams, organized workshops, seminars, and networking events, and fostered collaboration between students and industry professionals.

### GLOBE TELECOM, Emerging Technologies Intern (Taguig City, PH | June 2023 – August 2023)

- I worked on innovative projects such as 5G, IoT, AR/VR, ML and AI, and App Development within the Technology Strategy and Innovation (TSI) division.
- I assisted in researching emerging technologies, attended relevant conferences, met with vendor companies, contributed to the implementation of new systems, and collaborated with cross-functional teams to support the company's technological advancements and strategic initiatives.

## Skills & Abilities

### ENGINEERING SOFTWARES

- Matlab, Multisim, Diptrace, AutoCAD, CISCO Packet Tracer

### LANGUAGES / TECHNOLOGIES

- C#/C++/.NET
- Java/Kotlin
- Python/Jupyter
- NextJS and MERN Stack
- Machine Learning, AI, TinyML, and LangChain

### DEVELOPMENT BOARDS

- Arduino, ESP, STM, Raspberry Pi, Teensy

**Notable Achievements** 

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**PHILIPPINE STARTUP CHALLENGE 8** | Cebu City, Ph | December 2023

- Champion in both regional and national level, besting 629 entries from 158 schools and universities nationwide. Our project is Clarity, an AI-Powered Visual Code extension designed to enhance developer comprehension by offering context-aware code insights, precise explanations, and smart comments.

**DTI REGIONAL HACKATHON** | Online | November 2022

- 1<sup>st</sup> Runner Up in the Regional Level with our project KNOCK AI, an intelligent non-invasive classification system for hard-shelled fruit using acoustics and machine learning.

**PHILIPPINE STARTUP CHALLENGE 7** | Tuguegarao City | October 2022

- Champion in the regional level and participated in the national level with our project AIDE, a compact multi-purpose device for disasters and emergencies.

**Projects** 

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**ACOUSTICE SURVEILLANCE AND TINYML-BASED SYSTEM FOR DETECTING ILLEGAL LOGGING** | Thesis Project | December 2023 – June 2024

- Developed a novel system using the RP2040 microcontroller, DSP, TinyML, and LORA to detect and alert illegal logging activities. This was successfully presented on school and national conferences, and hackathons.

**SMART VENDING FRIDGE** | Upwork Project | January – March 2024

- Developed a proof-of-concept (POC) project for a Singapore-based client building vending fridges. I built the entire system including a PWA android app using Ionic, an admin dashboard using NextJS, a middleware using C#, and Arduino for controlling the fridge.

**RAG-BASED ASSISTANT CHATBOT BACKEND** | Upwork Project | March 2024

- Architected and developed a robust backend for a Japan-based client. I used Python and AWS Lambda for scalable serverless computing, utilized Cohere for generating embeddings, and implemented FAISS for an efficient similarity search.

**SCHOOL RESEARCH REPOSITORY** | Commission Project | March 2024

- Built a research repository utilizing NextJS for the frontend and admin dashboard, Sanity for headless CMS, and Supabase for DB, storage, and authentication. This project provides an all-in-one platform for storing, accessing, and managing academic papers.

**AI-POWERED VISUAL STUDIO CODE EXTENSION FOR CODE ASSISTANCE** | Hackathon, Startup, Thesis Project | August-December 2023

- Built an extension utilizing VS Code Extension API, LangChain, RAG Technology, and NodeJS to provide code explanations, generate documentation, and offer coding exercises, enhancing the developer experience. This was successfully presented on International Conferences and won a national startup competition.

**Character References** 

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**ENGR. ARIEL M. LORENZO, MECE, DEM**

- BS ECE Academic Program Chair
- University of Saint Louis Tuguegarao
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**SANDER T. SEDANO, MIT**

- BS IT/CS Program Chair
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