

# Sean Ballais

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Passionate and versatile software developer who has been programming for 10+ years, with around 2 years of those as a professional. Worked with different tech, and built apps for the desktop, web, and mobile. Ready to tackle unfamiliar technologies. Has some experience dealing with clients, and has taught programming. Currently co-leading a local developer community. Looking forward to tackling new and exciting challenges.

## Work Experience

### Programming Tutor

*Freelance*

*April 2024 – Present*

- Tutoring a junior high school student with C++ programming to aid with his schoolwork.
- Tutoring two college students with C programming to help them gain a better understand of programming.

### Computer Programmer

*University of the Philippines Tacloban College*

*January 2023 – February 2024*

- Was part of a research team working on mosquito localization via sound using deep learning with high accuracy (unable to disclose specific numbers at the moment).
- Was tasked with training models using Python, Docker, TensorFlow (with Keras), and Jupyter in an Ubuntu-based environment.
- Cleaned and processed raw audio data collected for the research project.
- Built a custom Python program to automate our data processing pipeline, which has allowed to more easily perform experiments with varying configurations.
- Aided a team member responsible for another component in fixing and resolving a critical bug.
- Handled setting up some of the hardware used for training models and storing team data.

### Programming Tutor

*Freelance*

*November 2022 – October 2023*

- Tutored one, sometimes two, high school students on C++ programming.

### Chief Technology Officer

*Subad*

*September 2021 – June 2022*

- Co-founded Subad, a platform in which people can connect with mentors they can learn from, with a South Korea-based Filipino partner.
- Developed the web app using Golang, SolidJS, PostgreSQL, GraphQL, and Redis.
- Managed the CI/CD and build pipeline which was composed of CircleCI and GitHub Actions, with build and deployment updates sent to our Discord server, making it easier for us to push and deploy changes and ensure that we have a working build thrice a day.

- Managed and set up our web server hosted in DigitalOcean and ran Ubuntu, while ensuring that best practices are followed to ensure server security.
- Designed the UI of the website using Figma, defined the UX flow, and created the art assets using Blender and Inkscape.

## **Software Developer**

*Freelance*

*August 2019*

- Modified my open-source election system, Botos, for use in the school elections of St. Therese Education Foundation of Tacloban Inc., to support multiple different elections for different grade levels in one system, among other modifications.
- Set up the server used during the elections.

## **Programming Tutor**

*Prodigy Development Center*

*June 2019 – July 2019*

- Taught junior high school students an introduction to C programming.
- Provided lectures, and gave exercises, exams, and homeworks to ensure learning and reinforce topics.

## **Software Development Intern**

*University of the Philippines Tacloban College*

*June 2018 – August 2018*

- Was tasked with refactoring and ensuring the code quality of The Learning Resource Center system of the college, which lets the center manage computers that it lets students use.
- Refactored the database module of the system server to use a more ORM-like approach.
- Modernized the build system used by integrating Gradle and removing Maven.
- Redesigned the splash screen and login screen of the system client for a more minimalist design that also follows the colour scheme of the university.

## **Software Developer**

*Freelance*

*January 2016 – February 2016*

- Contracted to set up and tweak the website of Eastern Vista, a local news organization, which used PHP and WordPress.
- Enabled the organization to publish news and content.

## **Software Developer**

*Philippine Science High School – Eastern Visayas Campus*

*May 2015 – July 2016*

- Built an election system for the school, as tasked by the outgoing student council president, using Python, Django, and jQuery, allowing for a user-friendly voting experience.

## Software Developer Intern

University of the Philippines Diliman

April 2014 – May 2014

- Developed a room reservation system for the Department of Computer Science using Python and Django.
- Was responsible for developing the login component of the system.

## Skills and Interests

### Technical

- *Most comfortable* with Rust, Python, C++, Cargo, CMake, Conan, and Git.
- *Knowledgeable to different degrees* with Java, Go, C, HTML/CSS, C#, JavaScript, Bash, PowerShell, SQL, Ruby, SDL 2, Dear ImGui, Qt, WinUI 3, Jinja, GitHub Actions, CircleCI, Docker, PostgreSQL, Redis, Win32 API, InnoSetup, TensorFlow, Blender, Inkscape, and Jupyter.
- *Dabbled* with Dart, Flutter, OpenGL, KMM, egui, and MQTT.

### Natural Languages

- Waray-Waray, English, Filipino, and Bisaya.
- Tends to write in English more.

### Interests

- App and Systems Programming
- Graphics Programming
- Game Development
- Open Source
- Community Development
- Urban Planning and Design

## Projects and Open Source Contributions

For a more complete list of my personal projects and open source contributions, please feel free to check out my [portfolio](#).

### Susi

March 2024 – May 2024

Susi is an open-source file encryption tool that encrypts using AES-GCM-256 to a custom file format, SSEF, to protect files from unauthorized access. This was also built to help me improve my programming skills. Susi is built with Rust, C#, and C++. An installer for the app was also created using InnoSetup.

### Botos

June 2016 – May 2024

Botos is an open-source election system built in Python for use in schools. It includes features such as allowing voters to vote for multiple candidates running for one position, and allowing

admins to view the current election results. It has been used in the Philippine Science High School – Eastern Visayas Campus and St. Therese Educational Foundation of Tacloban Inc.. I am no longer actively maintaining this, but I do some maintenance-related work when needed. End date indicates the last time I worked on Botos.

### **Building Placement Tool**

*July 2020 – September 2021*

Building Placement Tool is an app I developed as part of my undergraduate thesis, "Solving the Classical Unequal Area Static Facility Layout Problem Using a Modified Grey Wolf Optimization Algorithm". In line with the goals of my thesis, the app tries to find a good arrangement for a set of buildings within a certain quadrilateral lot using a stochastic optimization algorithm. In the app's case, it utilizes a modified grey wolf optimization algorithm. A modified genetic algorithm and particle swarm optimization were also implemented as points of comparison against our modified grey wolf optimization algorithm. I built this app using a custom game engine. Overall, this was built using C++, CMake, Conan, Dear ImGui, SDL 2, and EASTL.

### **conan-io/conan#7309**

*July 2020*

Added support for all Linux distros using apt to Conan, a C++ package manager.

### **ArjunNair/egui\_sdl2\_gl#30**

*August 2023 – September 2023*

Added support for egui v0.22 to egui\_sdl2\_gl, an egui backend library for rust-sdl2 and gl-rs.

## **Education**

### **BS Computer Science**

*University of the Philippines Tacloban College*

*2015 – 2021*

## **Volunteer Experience**

### **Chairperson of Affairs**

*Dev8*

*2018 – Present*

- Co-founded and currently co-leading Dev8, a local developer community based in Eastern Visayas, Philippines that aims to make a vibrant tech scene in the region.
- Led the hosting of community conferences, namely Google I/O Extended Leyte 2019, and Dev8 Tech Talks.
- Established connections and partnerships with various organizations such as DICT, Paytaca, DOST, Quantum Computing Society of the Philippines, Philippine Chamber of Commerce Tacloban Leyte Inc., and more, leading to more engagements, sponsorships, and participation in third-party events and activities.
- Ensure the activeness of the community, and involvement in partnerships.

## **Relief Operations Volunteer**

*Buhat Eastern Visayas*

*April 2022*

- Volunteered for the relief operations for Abuyog, Leyte, Philippines last April 14, 2022 after the onslaught of Typhoon Agaton that swept through the country on the same month.
- Conducted some documentation to aid in the documentation of the activity
- Helped distribute relief goods.

## **Google I/O Extended Leyte 2018 Volunteer**

*Google Developer Group Cebu*

*August 2018*

- Volunteered to help with the organization of the second Google I/O Extended Leyte hosted by GDG Cebu in Palo, Leyte, Philippines last August 4, 2018.
- Handled the audio and ensured a good audio experience during the event.

## **Google I/O Extended Leyte 2017 Volunteer**

*Google Developer Group Cebu*

*August 2017*

- Volunteered to help with the organization of Google I/O Extended Leyte hosted by GDG Cebu in Tacloban City, Philippines last August 19, 2017.
- Handled technicals and helped resolve any technical issues, ensuring a smooth-running conference.

## **Volunteer**

*N/A*

*November 2013*

- Volunteered to aid some members of the Armed Forces of the Philippines conduct a medical mission and relief operations in Tacloban City, Philippines in the middle of November 2013 after the onslaught of Supertyphoon Haiyan that ravaged the city and surrounding towns and provinces.
- Helped with crowd control, ensuring the crowd is managed properly as much as possible.