

# JOEL LOPEZ VILLARREAL

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## EDUCATION

### BS in Computer Science and Mathematics Minor

Southern Adventist University | Collegedale, TN.

May 2024 – 4.0 GPA

- Academic accomplishments include graduate with honors, receiver of the Dr. Rahn and Natalia Shaw award by nomination from the School of Computing, and twice winner of the Top Achiever award also by nomination from the School of Computing.

## EXPERIENCE

### Freelancer as a software developer

September 2023 – Present

- **AV Web App Project:**
  - Collaborated with designers and Audiovisual team members to develop a web app that would make event management and publication easier for a Seventh Day Adventist Church.
  - Developed the web app described above using several technologies, including Laravel, PHP, PostgreSQL, TailwindCSS, HTML, CSS, JavaScript, and Docker containers.
  - Tested the web application using Playwright for end-to-end testing, and PHPUnit for unit tests and integration tests.
  - Experimented with different technologies for the project, including NodeJS and SvelteKit, C# and ASP.NET Core, Kotlin with Ktor and Spring Boot, and Go.

### Software developer at Center for Innovation and Research in Computing (CIRC)

Southern Adventist University, Collegedale, TN

May 2021 – August 2023

- Developed, tested, and documented web applications using several technologies, including HTML, CSS, JavaScript, PHP, jQuery, Yii2, BootstrapCSS, Apache server, MariaDB, Codeception, etc.
- Developed robust RESTful APIs in PHP and the Yii2 web framework for a game-based learning system for the Psychology department at Southern Adventist University, with thorough Swagger documentation and extensive testing with the Codeception framework.
- Collaborated with other fellow software engineers to distribute responsibilities, resolve merge conflicts, and translate user requirements to code.
- Developed several internal tools for automation and code generation using PHP and Shell Scripting.
- Updated legacy PHP applications to newer versions and fixed deprecated dependencies.
- Implemented and executed security tests for spotting potential security vulnerabilities, such as XSS, SQL injection attacks, and CSRF attacks.
- Developed proof-of-concept prototypes in Flutter and the Godot frameworks for a game-based learning system.

## PROJECTS

- **Go Interpreter for Lox:** Developed an interpreter built from scratch written in Golang that interprets a made-up language called Lox. It follows the concepts provided by this book: <https://craftinginterpreters.com/>.
- **CPU Scheduling Visualizer:** Created a web application that presents to the user how a CPU schedules several processes according to the policy selected. Currently, it supports two policies: FIFO and Round Robin. The app was built using ReactJS and Typescript.
- **Real-time Multiplayer Card Game:** Designed and implemented a .NET C# game that is composed of two projects: a frontend WPF application, and a server that listens to commands sent by the client. The server was built from scratch and only uses TCP sockets. The application protocols were also implemented from scratch.
- **Nuclear Reactor Simulator:** A web application that simulates an admin dashboard for controlling different nuclear reactors. It can toggle a cooling system, control reaction rods, fuel, etc. as well as display simple analytics to the user. The app was built using ReactJS and JavaScript.

## TECHNICAL AND NON-TECHNICAL KNOWLEDGE

- Technologies I'm fluent with: Golang, HTML, CSS, JavaScript, Yii2, PHP, Python, Bootstrap, MariaDB.
- Technologies I'm familiar with: Java, .NET C#, SQLite, Typescript, Dart, ReactJS, ExpressJS, jQuery, NestJS, Flutter, Kotlin, TailwindCSS, SvelteKit, Docker, NodeJS, C, C++.
- Languages: Fluent in Spanish and English.
- Hobbies: Music (Cello and Clarinet player), volleyball player, hiker, swimmer, and classical music enjoyer.