

# 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

- Awards: Dr. Rahn and Natalia Shaw award, 2x Top Achiever award.
- Courses: Data Structures and Algorithms, Operating Systems, Web Development, Network Security, Database Management Systems, Web Services, Principles of Networking, Org of Programming Languages, Software Design, Numerical Analysis, Calculus 1 & 2, Computer Architecture and Design, Discrete Mathematics, Linear Algebra, Artificial Intelligence.

## EXPERIENCE

### Software Developer Freelancer

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 2022 – 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.

## 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.