Javier López

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SUMMARY

Experienced software engineer with a master's degree in software engineering. I started programming at 15 with Python and have since learned multiple languages, including JavaScript, TypeScript, C, Lua, PHP, SQL, and Bash. I specialize in automating processes web development, managing Linux systems, and designing scalable cloud infrastructure with IaC. Passionate about solving complex problems, optimizing applications, and contributing to open-source projects.

EXPERIENCE

Senior Software Engineer

Mod Op — **Mar 2025 - Now, Panamá, Panama**

- Building ModOp AI Infra and Tools!
- Multi-Agent Systems: Dynamic tool allocation, streaming artifacts, human-in-the-loop (Node, Typescript and React)
- Complex UI and processes leveraging state machines (Xstate) and durable execution (Restate)
- MCP Servers: Model Context Protocol implementation with auth, streaming, rate limiting
- RAG/Vector Store: OpenAI embeddings pipeline for knowledge retrieval
- AI Integrations: OpenAI, Anthropic, etc with extensible tool framework
- Code Execution: Secure python sandboxes for AI-powered data analysis
- Streaming Architecture: Real-time agent responses and interactive visualizations
- LLM Evaluation: Model performance testing and agent behavior validation
- Cloud Infrastructure: AWS, IaC, CI/CD, VPN Security. Terraform, Ansible, TailScale.
- Oracle SPP AI Integrations: Using Agents to reduce time to track time, and modify the system of record.
- Data pipelines and analysis (dagster, LLM as a judge, DuckDB, postgres, etc).

Team Lead

Partido MIRA — **December 2022 - Mar 2025, Bogotá, Colombia**

- Led the critical transformation of a set of troubled, monolithic applications into a modern, scalable, modular software architecture which sped up the development process.
- Managed and planned efficient infrastructure migration to AWS, introduced CI/CD, and developed data pipelines to resolve performance, reliability and scalability issues, increasing user satisfaction.
- Introduced containerization, automated testing, automated backups restore, zero-downtime deployment (ECS) and monitoring the fully automated stack cut change.
- Designed and optimized data models, database schemas, data integrity and flows.
- Integrated with external services (WhatsApp, SMS, email) using an event driven approach.
- Developed complementary modern applications using TypeScript and asynchronous programming.
- Implemented data analysis and visualization using Python, Pandas, and Apache Superset.
- Managed infrastructure using IAC with Terraform and various AWS services.
- Contributed to the organization goal with technology and ideas which were highly successful.

Software Developer

Partido MIRA — **June 2022–December 2022, Bogotá, Colombia**

- Developed and deployed interactive web applications for Partido MIRA, leveraging PHP and MySQL, which enhanced user engagement and streamlined data management processes by integrating real-time updates.
- Developed a mobile application using React Native and Node.js (backend).
- Earned the trust of peers and boss to be promoted to team lead.

Software Developer
Open Source Projects **January 2021–June 2022, Panama, Panama**

- Contributed to large-scale open-source projects, Neovim being a widely adopted editor used by thousands of developers worldwide.
- Collaborated asynchronously with a global team of ~20 contributors to enhance a complex codebase spanning C, Lua, Bash and Vim Script, maintaining high standards for code quality and rigorous approval processes.
- Designed and implemented APIs, helped improve the plugin subsystems, and integration tools to improve usability, scalability, and performance for a diverse user base.
- Optimized development workflows by enhancing continuous integration pipelines and ensuring maintainable, scalable code.
- Fostered community growth by mentoring contributors, reviewing pull requests, and promoting inclusive collaboration practices.
- Developed solutions to enable seamless integration and communication between platforms (halinuxcompanion), leveraging asynchronous programming techniques in Python and other technologies.

Software Developer
Self-employed **June 2020–December 2020, Panama, Panama**

- Designed and developed custom e-commerce solutions from scratch, tailored to meet specific client needs.
- Created scripts to efficiently load and manage large product catalogs, streamlining inventory management processes.
- Implemented secure payment gateway integrations from scratch (Wompi), ensuring smooth and safe transactions for customers.
- Built responsive and user-friendly interfaces, enhancing the overall shopping experience across various devices.
- Collaborated with cross-functional teams to gather requirements and deliver timely e-commerce solutions.

Software Developer
Raul Javier López SAS **January 2019–January 2020, Cartagena, Colombia**

- Developed and maintained software for tracking earthworks operations, focusing on dump truck material movement, distance calculations, and pricing.
- Implemented integration with external GPS tracking system to compare actual truck routes with planned routes, identifying inefficiencies and cost-saving opportunities.
- Created a dashboard for monitoring key performance indicators, enabling data-driven decision-making for project managers.
- Optimized database queries and implemented caching mechanisms to enhance application performance and user experience.
- Implemented automated testing protocols to improve code quality and reduce post-release issues.

Project Manager
Constructora FJO SAS & Raul Javier López SAS **January 2016–January 2020, Cartagena, Colombia**

- Directed the construction of a housing compound (500 units) and multiple road projects.
- Teams of up to 50 people.

Auxiliary Engineer in Hydraulics and Infrastructure
University of Cartagena **January 2016–June 2016, Cartagena, Colombia**

- Collaborated on designing an environmental quality smart monitoring system for the city of Cartagena.
- Contributed to smart monitoring system design for Cartagena.

EDUCATION

Masters Software Engineering
University of the Andes • Bogotá, Colombia • 2024 • 4.65

Specialization on Terrestrial Roads
University of Cartagena • Cartagena, Colombia • 2019

- How to design, build, maintain roads.

Civil Engineering
University of Cartagena • Cartagena, Colombia • 2016 • 3.98

PROJECTS

Github - github.com/muniter In my Github are a more up to date list of projects

Neovim Contributions - github.com/neovim/neovim

- Helped the Neovim project by contributing to the RPC API, continuous integration, and plugin subsystem.
- Participated in design decisions for the project API in Lua and C.

Home Assistant Linux Companion - github.com/muniter/halinuxcompanion

- Created the project which organically attracted users and contributors, currently 60 stars and 9 contributors.
- Developed asynchronous programming tools for integrating Home Assistant with Linux desktop systems. Implemented HTTP and D-Bus communication using async Python.

Adapter Queue - github.com/muniter/adapter-queue

- Queuing library for the JS ecosystem common interface with multiple backends: Redis, In Memory, Database, Sqlite, Postgres, Mongo, AWS SQS, etc.

Model Validator TS - github.com/muniter/model-validator-ts

- A type-safe validation library for TypeScript that helps you validate data with complex business rules and dependencies

E2E Testing, VRT, Data Validation

Universidad de los Andes • github.com/muniter/e2e_testing_assignment - May 2022–May 2022

- Comprehensive testing project using browser automation APIs, BDD tools, and CI integration.
- Implemented system-level testing using Playwright and Gherkin.
- Set up CI pipeline and documentation for the testing framework.

COURSEWORK

Data Science For All (DS4A)
Correlation One • Teamwork, Data Science, Data Analysis • 2022

Software Development
Universidad del Norte • Teamwork, Software Development • 2021

- Developed backends, frontend and mobile applications in multiple languages: Python, JavaScript, Java, etc.

SKILLS

- **Programming Languages**: Python, PHP, JavaScript, TypeScript, Lua, C, Bash/Shell
- **Backend Frameworks & Tools**: Fastify, tRPC, Hono, Prisma, Yii, Laravel, Flask, Django, FastAPI, Express, NestJS, RESTful APIs, Microservices
- **Database Systems & Data Tools**: SQL, MySQL, PostgreSQL, SQLite, MongoDB, Redis, Relational Databases, Complex Queries, Joins, CTEs, Window Functions, ORM, Caching Strategies, Polars, Pandas, Jupyter Notebooks
- **Frontend Frameworks & Tools**: React, Angular, HTMX, Vite, jQuery, Bootstrap, Tailwind CSS
- **Cloud & DevOps**: AWS, Docker, CI/CD, Terraform, GitHub Actions, Kubernetes, AWS CDK, Virtual Machines, Azure, Ansible

- **Other**: Git, Linux, GitHub, Productivity Tools, IDE, Neovim, Vim, Vscode, Analytical Problem Solving Skills, Troubleshooting, Debugging, Software Architecture, Design Patterns, SOLID, Agile, Software Integration.