Joaquin Lopez

Email | Website | Github | Linkedin

Santiago, Chile

About Me

Software developer and Computer Engineering student at the University of Chile. I have experience in Python and data processing libraries such as numpy, matplotlib, and pandas.

Additionally, I am proficient in several system languages and backend frameworks for web development, complemented by skills in frontend technologies. I also have knowledge of SQL and NoSQL databases, as well as massive data processing and graph processing for the web.

I am interested in developing software systems in embedded systems, topics related to semantic web, and networks.

Education

University of Chile   *2024*
B.S. | *Engineering Sciences with a major in Computing*   *Santiago, Chile*
Professional Title | *Civil Engineering in Computing (Currently pursuing)*

Technical Skills

High proficiency languages: C | Python | C# | Bash | Rust | SQL | HTML
Intermediate languages: Javascript | Java
Frameworks and libraries: Flask, Django (backend) | Bootstrap, vue (frontend) | Pandas, numpy, matplotlib (Data Processing) | Hadoop, spark (Mass Data Processing)
Embedded Systems Frameworks: Arduino-IDE | esp-idf
Databases: PostgreSQL | MySQL | Sqlite | Neo4J

Experience

Software Developer | *Niclabs*   *Sep 2024 - present*
Software development for DNS library in Rust   *Santiago*

- Implementation of specifications of various RFCs for a stub resolver
- Implementation of authentication functionalities with DNSSEC

Software Development Intern II | *CCHEN*   *Jan 2024 - Mar 2024*
Development of a plasma camera control system   *Santiago*

- Implemented a camera control system for simultaneous photo capture
- Real-time camera configuration
- Ethernet network for data transfer

Software Development Intern I | *SPEL*   *Jan 2023 - Oct 2023*
Software development for Cubesats   *Santiago*

The project consisted in the development of a software system for Cubesats written in C, which involved the following tasks:

- Port the software to a new platform (esp32 + FreeRTOS)
- Change the comunications library (libcsp)
- Implement a simple HAL for a gyroscope connected via I^2C

Teaching Assistant | *University of Chile, FCFM* *2022-2024*
Teaching assistant for various courses

- Introduction to Calculus
- Introduction to Algebra
- Discrete Mathematics for Computer Science
- Systems Software Programming
- Theory of Computation

PROJECTS

Thesis | *Semantic network extraction from dictionaries* *Jun 2024 - present*
Generation and extraction of a semantic network from a dictionary of synonyms

- PDF scraping with Tesseract OCR
- Network generation from extracted data
- Implementation of a simple application to visualize the network using Neo4J and visjs
- Study of the network, its topology, and properties

Software Project: dnsrust | *Niclabs* *Mar 2024 - Aug 2024*
Software development for a DNS library in Rust *Santiago*

In this course with a team of 5 people, we worked a DNS library in Rust, which involved the following tasks:
- Implementation of shared key authentication TSIG
- Implementation of some DNSSEC security extensions
- testing and debugging of those implementations

LANGUAGES

- English (C1 Advanced level)
- Spanish (Native)