

Sebastián Nava López

+52 55 2936 7801 | sebasnavalop@gmail.com | nlop.github.io

Experience

Web Security Auditor

Feb 2023 - Jul 2023

Centro de Investigación y de Estudios Avanzados (CINVESTAV-IPN) - Zacatenco

Member of the web security team on the audit of Mexico's electronic voting system for the 2023 local and state elections, developed for the national electoral board (INE) using Smartmatic's TIVI platform.

Main activities:

- Conducted web security assessments related to data validation using tools like OWASP Zap and Kali Linux's utilities producing 20% of all reports issued by the team.
- Tracked and validated fixes proposed by the provider using Jira with a response time of less than 48 hours.
- Wrote technical recommendations focused on frameworks such as ReactJS and AngularJS and languages like JavaScript ES6, aimed at improving web security on topics such as Cross Site Request Forgery and Base64 encoding with a 100% adoption rate by the provider.
- Developed ad-hoc plugins and scripts for use in the audit based on tools such as ESLint and Selenium.

Java (Mobile and Full-stack) Developer

Mar 2022 - Oct 2022

Centro de Investigación y de Estudios Avanzados (CINVESTAV-IPN) - Zacatenco

Intern with multiples roles in a federally-funded research project focused on COVID-19 contact tracing using Bluetooth Low Energy and different cryptographic tools.

Main activities:

- Supported the Android application and developed new features to enhance data collection therefore doubling the number of data points available for analysis.
- Designed and developed a new web application intended to share test data with other teams using Spring (MVC and Data) eliminating the delay for data to be available for analysis.
- Maintained the Android and Spring-based backend codebases covering 90% and 80% of each one respectively.
- Managed and deployed multiple web services used for application testing using NGINX and Tomcat on Linux servers.

Education

Bachelor's Degree in Computer Systems Engineering

Aug 2017 - Aug 2022

Instituto Politécnico Nacional - Escuela Superior de Cómputo

Projects

RISC-V processor implementation using VHDL

Sep 2022 - present

Developing a RISC-V processor implementation with a 100% coverage of the RV32I instruction set written in VHDL and implemented on a Basys 3 (Xilinx Artix-7) development board using Xilinx Vivado's toolchain and GHDL + GTKWave for simulations.

Remote Plant Monitoring System Prototype

Jan 2021 - Jan 2022

Led the development of an IoT system prototype designed to improve plant care using a NodeJS backend, an Android application and an ad-hoc hardware device based on the ESP32 family of microcontrollers, running FreeRTOS and equipped with different sensors for weather measurement producing a cost-competitive alternative to devices on the market.

Languages

Spanish	Native
English	Intermediate, B2(CEFR)

Skills

Programming languages:	Bash, C/C++, Java, JavaScript, Python, Rust, SQL, VHDL
Technologies:	Spring, PostgreSQL, Tomcat, NGINX, React, Android, Git
Others:	Linux, Jira, Vivado, Maven, MPLAB X, Vim, STM32Cube