Sebastián Nava López

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Experience

Web Security Auditor Feb 2023 - Jul 2023

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

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

Key Responsabilities and Achievements:

- Led web security assessments targeting OWASP Top Ten vulnerabilities using tools like OWASP Zap and Kali Linux producing 20% of all team-issued reports.
- Managed issue resolution by tracking and validating proposed fixes by the provider via Jira mantaining a response time of under 48 hours.
- Authored technical recommendations focused on frameworks such as ReactJS and AngularJS and languages like JavaScript ES6, aimed at enhancing web security on topics such as Cross-Site Request Forgery (CSRF) and Cross-Site Scripting(XSS). Achieved a 100% adoption rate by the provider.
- Developed bespoke plugins and scripts based on tools such as ESLint, Selenium and ZAP for use in the audit.

Java (Mobile and Full-stack) Developer Mar 2022 - Oct 2022

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

Worked as an intern in a federally-funded research project centered on COVID-19 contact tracing using Bluetooth Low Energy and different cryptographic tools.

Key Responsabilities and Achievements:

- 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 of a new web application, intended to seamlessly share test data across teams using Spring (MVC and Data), PostgreSQL and Thymeleaf. This initiative removed delays in data analysis.
- Mantained the Android and Spring-based backend codebases covering 90% and 80% of each one respectively.
- Actively managed and deployed multiple web services intended for application testing, using NGINX and Tomcat on Linux servers.

Education

Bachelor's Degree in Computer Systems Engineering Aug 2017 - Feb 2023

Instituto Politécnico Nacional - Escuela Superior de Cómputo

Projects

RISCV-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.

Remote Plant Monitoring System Prototype Jan 2021 - Jan 2022

Led the development of an IoT system prototype aimed at enhancing plant care.The project incorporated a NodeJS backend running on Azure infrastructure, an Android application and a bespoke hardware device leveraging the ESP32 family of microcontrollers, running FreeRTOS, equiped with different sensors for weather measurement. The result was a cost-competitive alternative to existing devices on the market.

Languages

Spanish Native
English Intermediate, B2(CEFR)

Skills

Programming languages: Java, Python, JavaScript, C/C++, Rust, VHDL, SQL, Bash
Technologies: Spring (MVC, Boot, Data), PostgreSQL, ReactJS, NGINX, Android, Git, JSON, CSS, HTML
Others: Linux, Jira, SonarQube, GNU Make, Maven, Gradle, OWASP Zap, Vim