

Elio Govea

Software Developer

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Profile

Software developer. Currently building aviation weather systems at [Vaisala](#). Former [ICPC](#) World Finalist

Experience

Senior Software Engineer [Vaisala](#) **Vantaa, Finland** 02/2025 - present

- Contributing to [AviMet](#), an aviation weather information system used at airports worldwide — providing real-time wind, visibility, lightning, wind shear, and runway-surface data to air-traffic control and pilots
- Working across a wide variety of issues, implementing new features, and adding support for new platforms
- Working across a C++/Qt codebase targeting both Windows and Linux, with CMake driving the build system; scripting and automation in Python, Bash, and PowerShell; web tooling in JavaScript and TypeScript

Senior Developer [F-Secure](#) **Helsinki, Finland** 05/2023 - 02/2025

- Designed CDN cost-reduction strategy for the Sense SDK — cut delivery costs by 80% with minimal impact on end-users
 - Analyzed CDN usage and identified key optimization areas
 - Designed a custom caching strategy to significantly decrease the volume of data transferred via CDN
 - Ensured that changes were backend-focused to avoid client-side updates and lengthy deployment negotiations
- Contributed to the design and implementation of a system to control dynamic traffic rules enforced from the cloud, enhancing the security capabilities of home routers

Developer [F-Secure](#) **Helsinki, Finland** 12/2021 - 04/2023

- **Built Sense SDK** — F-Secure's C++ SDK for home-router security: URL filtering and parental controls (forcing safe-mode browser engines), traffic-statistics collection, device recognition and fingerprinting; across IPv4/IPv6, DHCP, TCP/UDP, DNS, HTTP/HTTPS using Linux networking interfaces (netlink, netfilter, iptables, nfqueue, nflog, conntrack, BPF) and integrated with cloud back-end services
- **Shipped on x86, ARM, and MIPS targets** — designed and optimized the cross-platform build system (CMake + GNU Make) for fast, reproducible builds across toolchains, plus SDK integrations for reference platforms to streamline demos and future integrations
- **Designed Jenkins / AWS CI pipelines** — enforced code quality through coverage, static, and dynamic analysis; produced builds for multiple architectures and reference platforms
- **Built testing infrastructure in Python and Robot Framework**; implemented recovery mechanisms for OS- and cloud-service-level errors

Software Developer [F-Secure](#) **Poznań, Poland** 09/2020 - 11/2021

- Contributed to the core C++ of the Sense SDK
- Optimized a notifications system for security events
- Developed embedded Linux clients to consume cloud services
- Added endpoints to existing REST APIs
- Improved internal C++ interfaces and data structures

- Fixed bugs on existing products
- Added new interfaces using Unix domain socket for communication with different client/services

Software Engineer *Universidad de Pinar del Rio*

Pinar del Rio, Cuba 01/2018 - 08/2020

- Designed and implemented applications to collect and visualize vibration signals using C++ and Qt
 - Real-time signal processing
 - Technologies used include: C++ | IMU | Arduino | Serial communication | Qt
- Designed and implemented applications to collect and visualize data from sensors for object position tracking
 - Technologies used include: C++ | IMU | Arduino | Serial communication | Linux | OpenGL
- Assisted in teaching programming courses
 - Prepared lectures on C++, Python, Arduino, Linux, Raspberry Pi
 - Conducted lab sessions and provided assistance to students with programming projects
 - Designed and graded assignments
- ICPC Judge for the Caribbean region
 - Evaluated and proposed challenging programming problems and solution for the ICPC Caribbean Finals
- ICPC coach
 - Coached a team to the ICPC Latin American Finals

Education

B.Sc Telecommunications and Electronics Engineering *UPR*

Pinar del Rio, Cuba 09/2012-07/2017

- GPA 4.95/5.00
- ICPC world finalist

Achievements

- **Honourable Mention** 2018 ACM ICPC World Finals
- **2nd Place (Silver Medal)** 2016 ACM ICPC Latin American Finals
- **4th Place** 2015 ACM ICPC Latin American Finals
- **Top 1000** 2019 Google Code Jam

Projects

- **Baseball Limits 2D** ([live demo](#))
 - What does “best ever” look like when you compare two baseball stats at once? In one dimension it’s a ranking; in two it’s a Pareto frontier — the players no one strictly outperforms in both
 - Interactive viewer over 150 years of MLB data (Lahman Database 1871–2023, Baseball Reference 2024)
- **C++ project template**
 - Docker environment with common tools
 - CMake presets for multiple configurations
 - CI pipelines for reporting code coverage and generating documentation
- **DNS library**

- Parse and generate DNS messages
- Provide examples of DNS resolution
- **Suffix automaton visualization** ([live demo](#))
 - Interactive visualization tool using TypeScript and D3 to illustrate the algorithm to build a suffix automaton
- **Template metaprogramming examples**
 - C++ examples to create and modify types and constants at compile time
- **Router-network Docker testbed**
 - Docker setup that simulates a small home network — clients behind a router-as-gateway talking to remote servers — for testing network applications end-to-end without real hardware
- **Competitive programming archive:** [reference](#) & [solutions](#)
 - Personal notebook of algorithms and data structures, the kind ICPC teams build up over years
 - Running set of solutions to online-judge problems

Skills

- **Languages:** C | C++ | Python | Bash
- **Build & tooling:** CMake | GNU Make | Git | Docker | LXC
- **Systems:** Linux | Buildroot | OpenWrt
- **Concepts:** Algorithms | Data Structures | Networking
- **Protocols:** IP | DHCP | UDP | TCP | DNS | HTTP | TLS | QUIC

Languages

- **Spanish** [Native]
- **English** [Full Professional Proficiency]