Juan Diego Figari

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Summary

Intermediate Computer Science student at UBA with a systems-oriented focus. Experience designing and implementing event-driven servers in C, REST APIs in Go, and functional programs in Haskell and Prolog. Strong emphasis on explicit protocol design, state ownership, and incremental, correctness-first development on Linux.

Skills

- **Languages:** C, Go, Python, Haskell, Prolog, Java (light), JavaScript, HTML/CSS
- **Systems / Concepts:** UNIX domain sockets, TCP fundamentals, `select()`, event-driven I/O, protocol framing, client-server architectures, explicit state ownership
- **Tools / Misc:** Linux, Bash, Git, Valgrind, GDB, QEMU, PostgreSQL, CURL, basic scripting and automation, security wargames (OverTheWire)
- **Areas:** Algorithms, data structures, systems programming, OOP, functional & logic programming

Projects

Geospatial Data Visualization — Buenos Aires Subway *2026*
GitHub Repository

- Web-based map visualization built with MapLibre GL JS using public datasets from the City of Buenos Aires.
- Designed an offline data transformation pipeline to normalize heterogeneous CSV and GeoJSON sources.
- Chose a segment-based rendering model to preserve original geometries and avoid incorrect topological assumptions.
- Emphasis on correctness, explicit data assumptions, and reproducible transformations.

Event-Driven Chat Server in C *2025*
GitHub Repository

- Single-process, single-threaded, multi-client chat server using UNIX domain sockets (`AF_UNIX`, `SOCK_STREAM`) with `select()`.
- Layered protocol: framing, grammar, execution; explicit state ownership and deterministic transitions.
- Incremental, auditable design prioritizing correctness and debuggability.

REST API To-Do Server in Go *2025*
GitHub Repository

- REST endpoints with basic authentication, PostgreSQL integration, and `curl`-based testing.
- Early Go project focused on learning the language, standard library usage, and backend API structure.

Functional & Logic Programming Work *2025*
GitHub Repository

- Haskell & Prolog exercises: recursive structures, type-safe functional patterns, logic-based problem solving.
- Introduced to commit conventions and basic TDD practices.

Education

Bachelor in Computer Science — University of Buenos Aires, in progress (53% completed)
Bilingual High School (Science & Computer Focus) — Liceo Franco Argentino Jean Mermoz

Languages

- Spanish: Native
- English: Advanced
- French: Advanced

Experience

McDonald's - Arcos Dorados S.A.   2023-2024
- Customer service, cash handling, end-of-day closing; recognized as standout performer.

Piano Instructor (freelance)   2021-2025
- Private lessons and autonomous student management.