

Luis Fernando Pazzanese Pinheiro

Computer Engineering student at Insper — embedded systems, FPGA/VHDL hardware design and cloud infrastructure.

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EDUCATION

BSc in Computer Engineering · Insper Aug 2023 – Dec 2028

Currently in the 6th semester; expected graduation Dec 2028.

- Relevant coursework: Software Design, Instrumentation & Measurement, Electrical Drives, Data Science, Elements of Computing Systems, Computational Robotics, Agile Collaborative Development, Physical Layer of Computing, Modelling & Control, Web Technologies, Embedded Computing, Hardware-Software Systems, Programming Challenges, Computer Design, Cloud Computing, Embedded Linux and System on Chip (elective) .

CTF competitor · Insper SEC Aug 2025 – Jan 2026

- Competed in the club's internal CTFs for six months to stay at the top of the scoreboard — mostly web exploitation (SQL injection, XSS, SSRF), with some crypto and misc.

EXPERIENCE

Technology Intern (Back Office) · Zagros Capital Mar – Sep 2025

Independent real estate asset manager in São Paulo, R\$2B+ under management, with two listed funds (GGRC11, ZAGH11). Internship alongside classes in 2025; the code is internal.

- Replaced the manual consolidation of fund reports with Python scrapers that pull every quarterly report since each fund's inception and merge the metrics into Excel sheets grouped by fund type (CRI-backed REITs, FIDCs and others).
- Built the Streamlit dashboard the firm's president and vice-president used to follow fund values: a long-polling job captures the previous day's NAV PDF every morning and updates the figures with no manual steps.
- Gave the team a single always-current view of holdings by building interactive per-asset charts and replicating them across the firm's entire fund portfolio.

PROJECTS

Hardware design and cloud infrastructure — in progress · Insper Aug 2026 – present

- CPU in VHDL on an FPGA (Computer Design); bare-metal-to-AWS cloud course (MAAS, Juju, OpenStack, Kubernetes, Terraform) with a final project automated through CI/CD.
- Terasic Spider hexapod with Felipe Suarez — AI-generated code run with CLAUDE.md rules, ADRs and a knowledge vault; we decide, measure on the bench and review.
- **Stepper motor IP core** — VHDL IP for a unipolar stepper on a DE10-Standard: phase-accumulator step rate, trapezoidal ramp without multipliers or dividers, self-checking testbench (7 cases), +13 ns setup slack at 50 MHz.
github.com/LuisPazzanese/vhdl-stepper-ip

[Spider repo](#) ↗

AI sales assistant for a proptech — built in one day · Hackathon Lastro Jun 2026

- Next.js app with an Anthropic-powered chat that qualifies real-estate leads, a map of listings and an internal lead board for brokers; solo, one-day hackathon.

[Source](#) ↗

Embedded Systems — six open-source firmware projects · Insper Feb – Jun 2026

- **Air Mouse** — MPU6050 at 100 Hz → Madgwick AHRS → cursor over a 4-byte serial protocol; 4 FreeRTOS tasks, 3 queues, 1 semaphore. github.com/LuisPazzanese/pico-mpu-rtos
- **Touchscreen Stepper Controller** — Custom ILI9341 driver and resistive touch via ADC driving a half-step unipolar stepper with an animated UI. github.com/LuisPazzanese/pico-expert
- **Ultrasonic Ranger** — Non-blocking HC-SR04 ranging with SDK alarms and edge IRQs, 50 ms watchdog, serial CLI. github.com/LuisPazzanese/pico-timer

[RTOS Multi-task System](#) · [ADC Pipeline](#) · [IRQ Buzzer](#)

SKILLS

Languages	C · Python · x86 Assembly · JavaScript / TypeScript
Embedded	RP2350 (ARM Cortex-M33) · FreeRTOS · Pico SDK · I2C · SPI · UART · ADC · PWM · GPIO IRQs · GDB
Hardware	VHDL · FPGA · digital logic · CPU design (in progress)
Cloud & infra	Linux networking (TCP/IP, DHCP, NAT, DNS) · AWS (VPC, EC2, IAM, S3, Lambda) · MAAS · Juju · OpenStack · Docker · Kubernetes · Terraform (coursework, 2026.2)
Security	CTF web exploitation (SQLi, XSS, SSRF) · reverse engineering · Wireshark
Tools & web	Git · Linux · Python automation · Streamlit · FastAPI · Astro · TypeScript · Cloudflare Pages · AI-assisted development (Claude Code with CLAUDE.md rulebooks and ADRs)
Spoken	Portuguese (native) · English (C1, TOEFL — schooled in the UK, Canada and the US)