

Jaime García Ruiz

Madrid, Spain · EU citizen · jaigar21@ucm.es · +34 660 02 19 17 · github.com/J4iva · j4iva.github.io · [Linkedin](#)

Third-year Computer Engineering student at UCM focused on security, applied cryptography and low-level systems. I build complete systems — game-theory solvers in production, a hardened C++/Qt desktop app, ESP32 firmware — and test, measure and ship them to real users. Seeking internships and research collaborations with startups, labs and engineering teams.

■ EDUCATION & CERTIFICATIONS

Universidad Complutense de Madrid (UCM) — *BSc in Computer Engineering, 3rd year*

Sept 2024 – exp. 2028

ISC2 — *Certified in Cybersecurity (CC)* · [Verify on Credly](#)

Sept 2026 · valid through 2029

CEU San Pablo Montepíncipe, Madrid — *International Baccalaureate (IB) Diploma*

2022 – 2024

Math Internal Assessment: “From Euclid to RSA: prime numbers and their application to computer security”.

ACADEMICA International Studies — *U.S. High School Dual Diploma, online, taught in English*

2022

■ SKILLS

Languages: C/C++ (C++20), Python, Kotlin, Java, TypeScript/JavaScript, Bash, SQL, RISC-V Assembly

Systems & embedded: Linux, systemd, ESP32/ESP-IDF, Qt 6, Android, WebAssembly, Cloudflare Tunnel/Access, Tailscale

Security: ISC2 CC, applied cryptography, security auditing & binary hardening, CTFs, Wireshark, Nmap, MITRE ATT&CK

ML & algorithms: PyTorch, on-device LLMs (LiteRT-LM), Vosk STT, game theory (CFR+, MCTS), probability calibration

Tools & practice: Git, GitHub Actions CI/CD, CMake/Ninja, GDB, pytest, mypy (strict), ruff, QTest, Unity, LaTeX

Spoken languages: Spanish (native), English (C1)

■ PROJECTS

CharmeleonProject — *decision engine for imperfect-information games*

Jun 2026 – present

Python · TypeScript · PyTorch · Flask · charmeleonproject.tech

- Game-theory solvers from scratch (CFR+, ISMCTS, safe subgame resolving, Bayesian particle filter) treating Pokémon VGC as a poker-style imperfect-information game; Lichess-style post-game review (win% curve, blunders, EV loss).
- Value network (pure-Python MLP, trained with PyTorch) retrained on 3,300+ real games; beats the production model on a 558-game temporal holdout with disjoint 95% CIs (AUC 0.69 vs 0.59, opening turns 0.61 vs 0.53).
- 26K lines of Python, 35K lines of tests (172 files); CI enforces mypy strict, ruff and a custom architecture linter. Self-hosted in production (hardened systemd, Cloudflare Access, Tailscale) for 13 community beta testers.

Pass & PassPort — *desktop + mobile productivity system with serverless sync*

2025 – 2026

C++20 · Qt 6 · SQLite · Kotlin · Jetpack Compose · github.com/J4iva/Pass · [/PassPort](#)

- Native desktop app used daily by UCM classmates: two-way Google Calendar sync (OAuth 2.0 + PKCE, etag conflicts) and serverless multi-device sync over a private Git repo (CRDT-style: tombstones, last-writer-wins, UUIDv5).
- Android companion turning voice or text into tasks on-device (Gemma-3n on LiteRT-LM, Vosk STT); the LLM only emits validated intents. GitHub Device Flow, token in Android Keystore (AES-256-GCM), pushes via the Git Data API.
- Formal security audits of both apps (50+ adversarially verified findings, all critical/high fixed) and binary hardening (ASLR, DEP, stack protector, FORTIFY_SOURCE); 22K+ lines, 30+ test suites, GPLv3.

ESP32_SD — *embedded privacy-defense toolkit*

Jul – Aug 2026

C++17 · ESP32 · ESP-IDF · PlatformIO · NimBLE · Kotlin

- Firmware for an ESP32 device that passively detects BLE trackers (AirTag, SmartTag, Tile) and Wi-Fi cameras with a promiscuous 802.11 sniffer on low-level ESP-IDF APIs; signatures from the IEEE OUI registry and published research.
- Pure logic decoupled from the HAL and unit-tested off-device (6 native Unity suites) on a dual-core chip without PSRAM (fixed arrays, no heap); Android wardriving companion with GPS fusion and GeoJSON export (Kepler.gl/QGIS).

eM (RSALite) & portfolio — *cryptography from scratch, live in the browser*

2024 – present

C++ · WebAssembly · Emscripten · Astro · TypeScript · github.com/J4iva/eM

- RSA-style encryption with no crypto library (binary modular exponentiation, extended Euclid, block packing), compiled to WebAssembly as a live demo on my bilingual Astro/TypeScript portfolio with a self-hosted comments service.

■ ACHIEVEMENTS & ACTIVITIES

- HTB University CTF 2025** — **82nd of 1,000+ university teams worldwide** (5,000+ players) with UCM; 32/34 challenges across 7 categories, personal focus on cryptography.
- UCM Ethical Hacking Group** — member since 2024; #HackTheCERN and #HackTheCSN workshops; HackTheBox, pwn.college.
- HackClub Summer Hackathon 2025** — Audio_filter: note detection from WAV in C/C++, hand-written Fourier transforms.

■ EXPERIENCE

CoderDojo Majadahonda — *Programming Mentor (volunteer)*

May 2026 – present

Weekly coding club: younger kids building MIT App Inventor projects, older students on a stack of their choice.

Private Tutor, ESO & Bachillerato students (2025 – 2026) · **Waiter**, Vips (Jan – May 2025) · **Cook**, Hamburguesa Nostra (summer 2025) · **Commercial Assistant**, Renault dealership (Aug 2024) — part-time roles alongside full-time studies.