

Afonso Barros



PERSONAL INFORMATION

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- Github:** github.com/barros-11
- Location:** Braga, Portugal

TECHNICAL SKILLS & LANGUAGES

- Core Stack:** C, Python, SQL, Haskell, JavaScript
- Tools:** Git, GitHub, Linux (Bash), Valgrind, n8n
- Languages:** Portuguese (Native), English- C1 Advanced (EF SET English Certificate - 67/100)

PROFESSIONAL SUMMARY

Software Engineering student (19/20 GPA) with a strong foundation in Systems Architecture and Algorithms. I combine academic rigor with a practical drive to solve real-world inefficiencies. From building high-performance query engines to deploying automated business workflows, I focus on creating reliable, optimized software. Currently seeking a Summer 2026 Internship to apply and improve these skills in a professional engineering team.

EDUCATION

- University of Minho – 2nd year, Computer Engineering | [2024 - Present]:**
 - GPA: 19/20 (after 1st year)
- Carlos Amarante Secondary School | [2020 - 2024]:**
 - Final GPA: 19.6/20

PROFESSIONAL & ACADEMIC PROJECTS

- Clinic Automation Chatbot | [Summer 2025]:**
 - Designed and deployed a 24/7 WhatsApp AI agent using n8n and Google Calendar API, reducing appointment response time to approximately 10 seconds.
 - Achieved 70% fully automated bookings and 92.3% automated cancellations, saving the client 14.6 administrative hours in 3 months while significantly reducing patient no-shows via automated reminders.
 - Programmed custom JavaScript logic nodes to implement automatic scheduling, CRM database generation, and post-appointment review requests.
 - Built a scalable, modular architecture featuring strict error handling to differentiate between routine FAQs and complex human queries.
- High-Performance Flight Management System (C) | [2025/2026]:**
 - Architected a modular backend query engine to ingest, parse, and validate large-scale datasets (CSVs).
 - Reduced query latency to sub-20ms across 5+ million records by leveraging GLib Hash Tables for O(1) retrieval efficiency.
 - Enforced strict resource management and zero-leak memory safety (validated via Valgrind) by manually handling dynamic allocation in a low-level environment.
- Tower Defense Game (Haskell) | [2024/2025]:**
 - Implemented a tower defense game using Haskell and functional programming paradigms.
 - Features include an autonomous bot for automated gameplay, a 2.5D perspective, multiple levels, and the ability to upgrade towers.

RELEVANT EXPERIENCE

- Contributor to the Open Source Department (CAOS) at CESIUM (Computer Engineering Students' Association of the University of Minho):**
 - Developing and maintaining open-source software for the student community.
- BugsByte Hackathon | [March 2025]:**
 - Collaborated in a 4-person team to rapidly prototype a web interface for a Crypto ETF Optimizer, visualizing portfolio predictions from the backend.

VOLUNTEERING/ EXTRACURRICULAR ACTIVITIES

- Volunteer Mentor at CoderDojo Braga | [2025/2026]:**
 - Teaching Python programming fundamentals and algorithmic logic to children.
- Volunteer Programming Mentor at CoderCamp | [2025]:**
 - Mentored children in programming activities at UMinho, breaking down complex logic into simple, engaging concepts.
- Sports:**
 - Competitive background in Football and Canoeing; currently committed to a strength training routine.