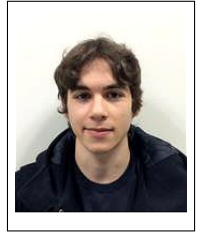


Tiago Almeida | Curriculum Vitae

Aveiro – 3800-319 Aveiro – Portugal

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Education

Escola Secundária Homem Cristo

High-school Diploma, 16

Aveiro

2019 – 2022

Universidade de Aveiro

Bachelor's Degree in Computer Engineering, 15

Aveiro

2022 – 2025

Skills

Languages: Python, Java, Javascript, SQL, C, Matlab, Assembly (MIPS), LaTeX

Libraries: NumPy, Pandas, requests, BeautifulSoup, Faiss, Flask, Levenshtein, SentenceTransformers, ANTLR4

Databases: SQL Server, SQLite3

DevOps: Docker, Git, Bash, zsh

Networking & Security Tools: GNS3, Wireshark, Burp Suite, NMAP, Netcat

Embedded Systems & IoT: Arduino, PIC MCUs (Programming, ADC, PWM), Raspberry Pi, Circuit Design, Sensor Integration (e.g., Ultrasonic, Humidity), Real-time Systems

Operating Systems: Debian-based Linux, Windows 10/11

Projects

Second Derivative Filter Implementation on FPGA

Aveiro

Project made within LSD class

Mar 2023 – May 2023

- Designed and implemented a digital signal processing system in VHDL to apply a second derivative filter to a test signal stored in ROM.
- Developed structural components including address generators, delay registers, and an arithmetic unit to compute the second derivative over 3 samples.
- Integrated the full system on a Terasic DE2-115 FPGA board, using 7-segment displays to show real-time input and filtered output signals.
- Built a finite state machine (FSM) for system control, including memory reset, start logic, and filter toggling via hardware switches and buttons.
- Validated functionality through simulation and hardware testing, matching output to reference data; received a final grade of 18/20.

Enterprise Network Design and Simulation in GNS3

Project made within RC1 class

Aveiro

Oct 2023 – Dec 2023

- Designed and implemented a complete IPv4/IPv6 enterprise network architecture for multiple organizations (ISP, Amazing Inc., GR8 Inc.) using GNS3.
- Assigned and justified public/private IPv4 and IPv6 address spaces, including NAT/PAT configurations and subnetting for office, WiFi, and factory networks.
- Configured static routing, DHCP, VLANs (Layer 2 and 3), and interconnections between routers and switches to ensure end-to-end connectivity.
- Deployed virtual DNS and HTTP servers with custom webpages; implemented a socket-based client-server application with message tracking per IP.
- Graded 20/20, reflecting a complete, well-documented, and fully functional implementation of all project objectives.

Operating System Simulator

Project made within SO class

Aveiro

Nov 2024 – Dec 2024

- Designed and implemented a modular simulator in C/C++ to replicate the behavior of a uniprocessor system with contiguous memory allocation and job scheduling.
- Developed core modules for job management (JDT), process control (PCT), memory allocation (MEM), and ready/swap queues (RDY, SWP).
- Built a central controller (SIM) to coordinate job submission, admission, swapping, and execution over simulated time.
- Simulated process states (NEW, READY, RUNNING, SWAPPED, TERMINATED) with realistic transitions based on system constraints.
- Handled address space management and memory fragmentation using frame-based contiguous allocation.
- Project GitHub repository: <https://github.com/ua-so-fso/somm24nm-so-g14>

Secure Document Repository Project

Project made within SIO class

Aveiro

Oct 2024 – Dec 2024

- Developed a secure command-line based document repository for organizations, enabling encrypted file storage and fine-grained access control.
- Implemented role-based access control (RBAC) using ACLs, allowing dynamic assignment of roles and permissions to subjects within organizations.
- Designed and established secure sessions via hybrid encryption (RSA + symmetric key), with signature validation, HMAC, NONCEs, and session expiration.
- Enforced confidentiality, integrity, and anti-replay protection across all payloads; session keys securely stored server-side.
- Graded 18/20, demonstrating strong understanding of secure system design and implementation.
- Project GitHub repository: https://github.com/detiuaveiro/sio-2425-project-113106_114629_113093

For more projects and detailed descriptions, see: <https://tiagojralmeida.github.io>

Affiliations

IT - Instituto de Telecomunicações

Member

Aveiro

Feb 2025 – Present

Experience

Past Positions.....

Gres Panaria Portugal

Aveiro

Internship

Jul 2022 – Sep 2022

- Provided technical support to employees, including hardware diagnostics and software troubleshooting in a corporate environment.
- Assisted system administrators with routine maintenance tasks and issue resolution within enterprise systems.
- Gained hands-on experience with business critical computer systems and user support tools.
- Developed foundational technical skills and workplace competencies that proved valuable throughout university studies.

Scientific Performance

Project's Collaboration.....

Data curator for the dataset used in the following publication (credited in the ack): “Semantic and Numerical Feature Clustering for Automated Privacy Quantification” (https://www.researchgate.net/publication/392064590_Semantic_and_Numerical_Feature_Clustering_for_Automated_Privacy_Quantification)

Extracurricular Activities

Member of the school's Chess Club

Aveiro

Escola Secundária Homem Cristo

2019 – 2022

- Developed strategic thinking and decision making skills in a competitive environment.

Dec 2024 – Present: Pursuing two practical job-role paths on offensive security through the **HTB Academy** platform: *Bug Bounty Hunter* and *Penetration Tester*. Both are approximately 50% complete and involve hands on labs, real world tools, and attack simulation exercises. These paths are pursued alongside regular CTF participation.

2024 – Present: Active participant in international cybersecurity competitions and workshops, including:

- **Advent of Cyber 2024** – TryHackMe (Dec 2024)
- **Hackfinity Battle CTF** – TryHackMe (Mar 2025)
- **Cyber Apocalypse 2025** – Hack The Box (Mar 2025)
- **SwampCTF 2025** – University of Florida (Mar 2025)
- **PlaidCTF 2025** – Carnegie Mellon University (Apr 2025)

Ongoing: Personal interest in embedded systems and IoT, previously building small projects using Arduino and Raspberry Pi boards. Examples include servo-controlled mechanisms, smart plant watering with humidity sensors, and basic auto stop system on toy car using ultrasonic sensors. These explorations enhanced my understanding of hardware-software interaction and real-time problem solving.