

Afonso Muralha

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Education

MSc/ BSc **Instituto Superior Técnico**, Electronics Engineering Lisbon
 • Thesis: Cubesat FPGA-based radio communications (scored 20/20) 2019 – 2023
 • 2018-2019: Secretary at N3E student group
 • 2017-2019: Coordinator at N3E Robotics group

Experience and Research

Spin.Works S.A., Electronics Engineer Lisbon
 Feb 2023 – present
 • Mixed-signal Hardware design (Eagle CAD, KiCAD)
 • HDL development and testing on Xilinx platforms
 • HDL CI/CD deployment and management
 • Embedded C development (applications/drivers)

ISTSAT-1 / IST Nanosatlab, Electronics Engineer research group Lisbon
 2019 – 2025
 • Responsible for the EGSE (Electronic Ground Support Equipment) hardware design and development (Altium Designer)
 • Planning the ISTSAT-1 integration and qualification campaign alongside ESA's representatives
 • Execution of the ISTSAT-1 integration, qualification and launch campaign
 • Non-conformity management, discussion and resolution
 • Successful satellite launch on the Ariane 6 maiden flight

Vibration Test Campaign at ESA Cubesat Support Facility, Electronics Engineer Redu, Belgium
 • Responsible for hardware tasks and tests 2020

Battery Qualification Campaign at ESA Cubesat Support Facility, Electronics Engineer Redu, Belgium
 • Responsible for the battery tester and logger software developed in Labview 2019

Relevant Skills

Languages: C, Python, Verilog, UVM, Bash scripting

HDL Platforms: Xilinx

E-CAD: Altium designer, KiCAD, EAGE CAD

Electronics: Competent in SMD and THD Soldering and reworking

Prototyping and iterative design: 3D Printing (FDM/SLA), 3D Modeling (Fusion360, Solidworks)

Languages

Portuguese: Native speaker

English: Fluent

Communication skills

- Speaker at 3D Printing Workshops “3D Printing 101 – From Design to Reality”
- Instructor at Arduino classes for beginners
- Instructor in workshops at N3E and altLab

Featured Projects

Inércia 2023/2024 Floppy electronic badge 2023 – 2024
 Open-source hardware badge for Inércia demoparty
 • Small-scale production and deployment
 • JLCPCB sponsorship
 • Designed in KiCAD

Q-Dice	2021
Electronic dice roller based on particle detection via Geiger-Müller tube	
<ul style="list-style-type: none"> • Designed in Altium designer 	
Arktika FPGA	2020
Open source hardware Lattice FPGA development board	
<ul style="list-style-type: none"> • Designed in KiCAD 	
Pixels Camp Matrix badge	2019
Wi-Fi enabled LED matrix badge for Pixels Camp V2	
<ul style="list-style-type: none"> • Designed in Altium designer • PCBWAY sponsorship 	
“Duckuino” HID Emulator and Payload Injector	2018
Feature-rich “USB Rubber Ducky” Clone	
<ul style="list-style-type: none"> • Designed in Altium designer • PCBWAY sponsorship 	

Selected Honors

- First place at Inércia Demoparty photography competition (2022)
- Ranked top 3 with Lightning Cashback project at Chainhack 2019
- 1st Place on the 2018 Local Hack day 12h Hackathon (2028)
- 4 Merit Ribbons for the “Garra Makey” Project at Lisbon Maker Fair (2016)

Multi-Cultural Enrichment Activities

“SNACK” International Exchange Program	Svendbog, Denmark 2014
“Changing Perspectives” International Exchange Program	Sintra, Portugal 2013
“Beat Poverty” International Exchange Program	Svendbog, Denmark 2012

Volunteering

School Support Lessons for Children in Risk at “Casa das Cores”	Lisboa, Portugal 2016
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Other Interests

- Amateur radio (Cat2) and satellite tracking
- Astro/Photography
- 3D Printing
- Hobby Electronics
- Self-hosting
- Music theory, jazz, piano