JOÃO BARREIROS COELHO RODRIGUES

I'm a 22 years old Electrical and Computer Engineering MSc student at IST-ULisboa. My main academic focuses are Reconfigurable Computing, Digital Systems Design, Computer Architectures, Embedded systems and Electronic Design. I'm also interested in procedure oriented programming focused on algorithm optimization and application on Electronic Design Automation and UNIX systems

PROFILE & CONTACT

- September 16th 2002
- Portuguese
- joaobarreiroscoelhorodrigues@tecnico.ulisboa.pt
- Homepage
- @Joao-Ex-Machina
- João Barreiros C. Rodrigues

TECHNICAL SKILLS

HW Design and Programming

C	●●●●●●●○○○
VHDL	●●●●●●●○○○
RISC-V Assembly	●●●●●●○○○○
UNIX Shell	●●●●●○○○○○
MATLAB	●●●●●○○○○○
C++	●●●●○○○○○○
x86 Assembly	●●●○○○○○○○

Operating Systems

GNU/Linux	●●●●●●●●●○
LineageOS	●●●●●●○○○○
Microsoft Windows	●●●●●○○○○○
TempleOS	●●○○○○○○○○

Software & Tools

Git	●●●●●●●○○○
Vim/Neovim	●●●●●●●○○○
Vivado	●●●●●●○○○○
Vitis HLS	●●●●●○○○○○
Vitis IDE	●●●●●○○○○○
LaTeX	●●●●●○○○○○
GNU Octave	●●●●○○○○○○
KiCAD / EDA tools	●●●●○○○○○○
QEMU / virt. tools	●●●○○○○○○○

Area "softskills"

Technical support for Arch and other GNU/Linux distribution users around Alameda Campus.
Casual firmware-level support.
Casual consumer-level Hardware repair and upgrade (Thinkpad T430, etc.) .
Eletronics repair (Power supplies, antennas, etc.).

Languages

Portuguese	●●●●●●●●●●
English	●●●●●●●●○○
German	●●○○○○○○○○

GENERAL SKILLS

Ingenuity | Logical thinking | Teamwork
Troubleshooting | Public Speaking

WORK HISTORY

11/2023 - Present
Instituto Superior Técnico Universidade de Lisboa

Teaching Assistant

Under the Department of Electrical and Computer Engineering I have been lecturing laboratory and problem classes on the following courses:
Algorithms and Data Structures (LEEC): 1st Q. 2024/2025
Digital Systems (LEEC): 2nd Q. 2023/2024 (9/9 QUC eval.)
Programming (LEAer): 3rd Q. 2023/2024
Computer Architectures (LEEC): 4th Q. 2023/2024
As a Teaching Assistant at DEEC-IST and as President of HackerSchool I have helped on the foundation of the **Scientific Area of Computer Systems Open Lab**, to complement, through a hands-on approach, undergraduate teaching. The Open Lab is equipped with tools and materials to assist on the development of workshops and student projects.

09/2024 - Present
HackerSchool

Board Member (Chief Hacker Officer - Hacker Culture and Lab Coordinator)

Head co-developer of the student group technical sphere.
I co-manage and organize HackerSchool's infrastructure and Lab, providing a technical plataform for Hackers to build their projects and ensure their success. Continuing the goals of my administration I organize and assist on technical and recruitment workshops, promote good practices on Free and Open Source Hardware/Software and promote the partnerships with AC Computadores-DEEC

09/2024 - Present
INESC-ID

Intern

I am an intern at the ESDA - Electronic System Design Automation group of the HPCAS - High Performance Computer Architectures and Systems section of INESC-ID. I am doing my thesis on "Embedded System for Aerial Object Detection using Transformers", which focuses on a Hw/Sw Co-designed Accelerator for ViTs under the Supervision of Prof. Horácio Neto and Prof. Mário Véstias

EDUCATION

09/2023 - Present
Instituto Superior Técnico Universidade de Lisboa

Electrical and Computer Engineering Master's in Engineering

Major in Computer Systems
Minor in Electronic Circuits and Systems
Most relevant curricular units included in the degree and respective final grade(s):
Digital Systems Design: Projects: 17.1/20 | Final grade: 17/20
Advanced Computer Architectures: 17/20
Computing Systems Technologies (*Electronics for Computers and Quantum Computing*): 17/20
Sensors and Actuators: 19/20
Mobile Networks and IoT: Project: 18.8/20 | Final grade: 16/20

EXTRACURRICULAR ACTIVITIES

Hacker/Maker: I've been entangled with the Maker Community since I was a child, attending various workshops on Electronics, Programming, Robotics and Fabrication techniques. Since joining HackerSchool in 2021 I've developed directly or helped develop many projects:
- Fixing and Upgrading a Prusa 3D Printer (WIP)
- Liberating a Cetus3 proprietary 3D Printer (WIP)
- GreenThumb - A Aeroponic System using IoT
- V.I.S.O.R. - An AI-powered voice assistant for which I am making a mechatronic interface with a CRT.

I've also taught many workshops, particularly on Electronics, IoT and Computing systems: HackerSchool HSWatch Workshop Bundle (2022), HackerSchool Arduino Recruitment Workshop (2022-present), HackerSchool/NEEIIST/RNL-DEI/ Linux Install Party (2022-present)

HISTORY / EXTRA

Historical section of my Curriculum Vitae. Adds non-essential or since deprecated information about education and work history.

OTHER TECHNICAL SKILLS

Programming
R
Software & Tools
LibreOffice Suite
SIMULINK

⚙ WORK HISTORY

📅 08/2022 - 09/2024
📍 HackerSchool

President
Head developer of the student group social and technical spheres.
Commander of a team of over ten people to manage inside and outside communication, marketing, internal projects, material and human resources management.
The main focus of our administration is to revive the hacker spirit and culture inside HackerSchool through the adoption of a series of pro-open learning, pro-free and open source software and hardware policies
During my Administration improvements to the infrastructure were made, mainly the organization of a new hacker room

📅 09/2021-08/2022
📍 HackerSchool

Board Member
Marketing and Communication
Proponent of software reforms inside HackerSchool (switch to FOSS alternatives).
Developer of marketing material such as merchandise, stickers and flyers. Establishment of connections with other student groups and enterprises.

🎓 EDUCATION

📅 09/2020 - 01/2024
📍 Instituto Superior Técnico
Universidade de Lisboa

Electrical and Computer Engineering
Bologna Bachelor's
Finished Bachelor's with an average of 14 out of 20.
Relevant curricular units included in the degree and respective final grade(s):
Digital Systems: 17/20
Computer Architectures: 17/20
Object Oriented Programming: Project: 19.6/20 | Final grade: 17/20
Programming: 2nd project: 18/20 | Final grade: 15/20
Algorithms and Data structures: project: 18.3/20 | Final grade: 15/20
Computer Networks and the Internet: project: 17/20 | Final grade: 16/20

EXTRACURRICULAR ACTIVITIES

Activism and Voluntary Work: Since February 2023 I have been a member of ANSOL (Associação Nacional para o Software Livre) the portuguese associate organization of FSFE (Free Software Foundation Europe). ANSOL is a non-profit association dedicated to the promotion and development of Computing Freedom.
I was a volunteer at Lisbon Mini-MakerFaire 2023 helping mostly with resources and space monitoring. I have also been a regular participant/monitor/helper at the Linux Install Parties organized at Instituto Superior Técnico.
I am also dedicated to the hacker/maker cause, promoting hacker culture and giving my first talk on the matter: *Hacker Culture at IST* during MiniDebConf Lisbon 2023

Sports: I practiced Judo for six years, reaching the third kyu.
I then switched to Muay Thai, which I practiced for around three years.
From 2017 to 2020 I practiced archery as a School Sport.
In 2018 I won, together with my two teammates, the second place in the archery district school competition.
In 2019 I was appointed referee for the regional school competition.
As of September 2024 I started going to the gym with a preference for strengthTraining.

Non-Technical Leisure: I've a been a fan of tabletop role-playing games (such as Dungeons and Dragons and Call of Cthulhu) for a long time. I'm also a casual player of chess.
I'm a avid reader of medieval fantasy (mostly J.R.R Tolkien and George R. R. Martin) as well as goth and weird fiction (particularly Edgar Allan Poe and H.P. Lovecraft).
I'm a casual player of acoustic and electric guitar with a preference for heavy metal.