GONÇALO PEREIRA

Electrical and Computer Engineer

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EXPERIENCE

IoT Specialist

BUILT CoLAB

Mar 2021 – Present | Porto, Portugal

- I have been developing specialized sensor prototypes for construction machinery (e.g. trucks, pavers, rollers) to improve productivity of the construction sector by making it more digital and reduce overhead and improve observability of construction processes.

HDMI-LVDS Video Converter

Summer Internship

Jun 2019 – Sep 2019 | APTIV, Braga, Portugal

- A video converter schematic circuit and layout were designed in order to be used as a debugging tool on **infotainment** systems development and validation.
- Several product life-cycle activities were performed, for example component replacement analysis due to components end-of-life as a way to interact with the company's team.

Underwater Autonomous Vehicle for Target Searching

Computer Vision

Sep 2016 – Dec 2017 | INESC TEC, Porto, Portugal

- I took part in a team which developed an underwater autonomous vehicle for a competition that had the mission to map and detect targets in an emergency response scenario where it's not proper to be explored by humans, inspired by the 2011 Fukushima accident.

IoT Sensorization Solution for Solar Panel Laboratory

Field Experience

Aug – Jan 2016 | Lisbon, Portugal

- Developing a smart temperature and humidity sensor system for an oven to improve manufacturing yield was my initial contact with designing electronic systems to be used in a factory floor.

PUBLICATIONS

Cooperative Perception for (Automated) Road Transport Enabled by Vehicular Networks

2020 IEEE Vehicular Networking Conference (VNC)

Dec 2020 | IT, Porto, Portugal

- A cooperative perception platform was designed based on COTS hardware, including an initial implementation of the ETSI TR 103 562 standard using ROS.
- Low level configurations were performed requiring to compile a Linux kernel with custom configurations (devicetree files).
- Different processing units and sensors were tested in order to understand the feasibility and latency of cooperative perception in real scenarios.
- This work was developed in the scope of my master thesis and the project *POCI-01-0145-FEDER-016426*

EDUCATION

Master in Electrical and Computer Engineering

Faculdade de Engenharia da Universidade do Porto (FEUP)

Sept 2015 – Nov 2020

Microelectronics and Automation

Erasmus+ Program

University of Twente

August 2018 – February 2019

- I consider the experience I had in the UT and in the Netherlands in general improved my critical thinking and my interaction in a multicultural environment
- The courses I took: System On-Chip design, Embedded Computer Architectures, Internet Security and Advanced Programming enriched my knowledge on Embedded Systems

STRENGTHS

Analog and digital electronics
C/C++
Linux for embedded systems

LANGUAGES

Portuguese

Native

English - C1

Cambridge Certificate in Advanced English

LEISURE

Sports
Played basketball for 7 years in FC-Gaia and I still enjoy riding my bike on the weekends.

Open-Source Contributions
I enjoy creating gadgets for smart home devices and robots, and I often find myself contributing and developing open sourced projects on GitHub.

ACTIVITIES

LCD Porto - Laboratório de Criação Digital

Secretary and Member

Nov 2016 – Present Porto, Portugal

- Being involved in community and social technical projects has been giving me real world and a raw perspective where we as a society most need technology to be.
- Workshops and projects about electronics projects (e.g. microcontrollers, PCB design, home automation)
- As part of the coordination team, I have been developing a number of soft skill regarding management, organization and professional relationships.

IEEE Robotics and Automation Student Chapter

Member and Founder Chair

Oct 2016 – Sep 2019 Porto, Portugal

- Being a leader in a team with people from different technical backgrounds improved my skills of knowledge sharing and organization of work teams by matching the right people together.
- Giving workshops also improved my experience in explaining topics clearly even if those were trivial for me.
  Most popular workshop: https://github.com/ieeeupsb/workshop_ESP8266

IEEE R8 Student & Young Professional Congress 2018, Porto

Branding Team - Organization

25 – 29 Jul 2018 Porto, Portugal

- My role was to arrange manufacture of designs made by the team balancing cost and quality of the different processes.
- During the event dates I also helped in logistics which gave me experience to think on possible needs of the participants and provide for them in proper time in order to make the participants enjoy the event.

"Universidade Júnior" and "Mostra da Universidade do Porto"

Tutor

2016, 2017 and 2018 FEUP, Porto, Portugal

- Talking about my study program and Engineering in general to help younger students choosing the right study path. To that end, workshops about robotics (sensors and actuators, maze solver and robot races) were presented.

"Projecto Saber"

Volunteer

Jan 2015 – June 2015 Vila Nova de Gaia, Portugal

- Helping younger students in their homework was my initial experience in knowledge sharing.
- Hours in record: 36

PROJECTS

Opulo LumenPnP
Contributor to electronics design of open-source Pick and Place machine

ETSI Cooperative Perception
V2X service implementation

Light Dimmer
A Thread device using nRF52, OpenThread and Matter

Doorbell
Door ringer using FreeRTOS on ESP32

IoT on Azure
MQTT on Azure IoT Hub cloud services using ESP32

PiTank
Robot Learning game with ROS

Audio RF System
FPGA Prototype

PARTICIPATIONS

POP'16
1st place
Optimize C code execution

F1 In Schools
2nd Regional, 10th Nacional and "Research and Development" award
Racing Car Prototype

EBEC
Rapid Prototyping to solve a challenge

Neeeil It at CEiiA
Autonomous boat to solve maze

Pixels Camp
Supermarket chat bot