



Miguel TAVARES
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ABOUT ME

I'm Miguel Tavares. I am finishing my Master Degree in Computer Science at Faculdade de Ciências da Universidade de Lisboa (FCUL). I received my BSc. in Computer Science from the University of Lisbon in 2020.

Throughout my education, I have found it easy to work alone and in a team. I have always managed to achieve my personal goals in my studies. I've always maintained a good relationship to this day with many of the colleagues I've had since I was little.

I'm especially interested in Artificial intelligence and Software Engineering. Problem-solving (such as programming an agent to solve a game) is something that fascinates me, always trying to think of more creative and original ways to solve them.

In my free time, I enjoy playing futsal with friends and hanging out in calm spaces.

EDUCATION

FACULDADE DE CIÊNCIAS DA UNIVERSIDADE DE LISBOA

2020-Present

MASTER DEGREE IN COMPUTER SCIENCE

- **Current Score:** 16
- **Specialization Curriculum Grouping:** Artificial intelligence
- **Main Course Units:**
 - **Mobile Robots:** 17
 - **Advanced Machine Learning:** 16
 - **Parallel and Concurrent Programming:** 17

FACULDADE DE CIENCIAS DA UNIVERSIDADE DE LISBOA

2017-2020

BACHELOR OF COMPUTER SCIENCE

- **Final Score:** 15
- **Main Course Units:**
 - **Information Systems Project:** 18
 - **Programming Principles:** 15
 - **Programming Laboratories:** 18

ONGOING

ROBOTFIX : DETECTING BUGS ON VARIABLES IN ROBOT PROGRAMS

I'm developing a tool that can statically find errors in robotic programs (that use Robot Operating System framework). The tool is called RobotFix, which allows programmers to create annotations that define the unit or constraints of variable values. Through these annotations, the tool will look for inconsistencies in the developed code and detect statically the places which the annotations are not being respected.

- **Thesis**
- **Place:** LASIGE, Faculdade de Ciências da Universidade de Lisboa
- **Used Software:** Robot Operating System, Python, Pytype, Lark

ACADEMIC PROJECTS

ROBOT FOR BLIND PEOPLE

In this project the goal was to program a Thymio robot for blind people. The thymio robot had a default state that always tries to walk ahead of the person even if the person changes his direction. When the robot finds a object with the front sensors, it stops and goes around the user indicating the free directions, the robot also had a scout mode that tries to find a way out of a space and then comes back to tell the user to follow him to the exit.

- **Grade:** 15.7
- **Course:** Mobile Robots
- **Software:** Aseba Studio

CONVOLUTIONAL NEURAL NETWORKS FOR WASTE CLASSIFICATION

In this project, the goal was to create a neural network that could distinguish organic waste from recyclable waste to facilitate recycling in the future. CNN and VGG-16 implementations were used and we were able to obtain better results than the simple implementations of existing CNNs in the literature found.

- **Grade:** 18.7
- **Course:** Advanced Machine Learning Course
- **Used Software:** TensorFlow , Numpy, Pandas

PUBLICATIONS

- **An experience report on challenges in learning the robot operating system.**
Paulo Canelas, **Miguel Tavares**, Ricardo Cordeiro, Alcides Fonseca, and Christopher S. Timperley *In 4th International Workshop on Robotics Software Engineering (RoSE'22), May 9, 2022, Pittsburgh, PA, USA. ACM, New York, NY, USA. IEEE, 2022. URL https://rose-workshops.github.io/files/rose2022/papers/RoSE22_paper_11.pdf.*

AWARDS AND DISTINCTIONS

- **Academic Merit** - Faculdade de Ciências da Universidade de Lisboa - 2018/2019