AYOUB HSAINE

Robotics and Cobotics Engineer Seeking PhD Starting in September



@ ayoub.hsaine2001@gmail.com Ayoub Hsaine

J +33 7 60 13 44 57 Ayoub Hsaine Bordeaux, France 4 Portfolio

➡ Driving License B



EDUCATION

State Engineer in Robotics and Cobotics **Euromed University of Fez**

Sep 2021 - Jun 2024

Fez, Morocco

Preparatory Cycle **Euromed University of Fez**

Sep 2019 - Jun 2021

Fez. Morocco

Baccaleureat in Physical Sciences

Mohammed EL Rafrai High Schoo

2019

EL JADIDA, Morocco

PUBLICATIONS



Exploring Maze Navigation: A Comparative Study of DFS, BFS, and A* Search Algorithms

Statistics, Optimization & Information Computing

A comparative study was conducted using Python and Pmaze to evaluate the performance of DFS, BFS, and A* search algorithms in path planning for a maze. The main objective of the project was to compare the efficiency of these algorithms in terms of path cost and algorithmic complexity. No physical robot was used in this study as it focused solely on the analysis of search algorithms. This study contributes to the advancement of knowledge in the field of path planning by exploring different approaches for mazes using Python and Pmaze.

Link to publication: http://www.iapress.org/index.php/soic/ article/view/1939

PROJECTS

Safe Box using LabVIEW MyRIO.

PepperChat: Integration of ChatGPT for intelligent conversations with the Pepper robot.

OpenCV and OCR for parking management.

Comparative Study: Path planning using search algorithms: DFS, BFS, and A*.

RoverBot: A mobile robot designed with mecanum wheels.

COVID-19 detection using support vectors, KNN, and perceptron.

EXPERIENCE

On-site Final Internship **Generation Robots**

- March 1 to August 30, 2024
- The internship focuses on the development, implementation, and testing of algorithms that enable the GR100 robot to verify the integrity of an outdoor fence.
- Conduct a state-of-the-art review.
- Test and select the perception modalities for extracting the fence from the environment.
- Develop algorithms to verify the regularity of the fence pattern.
- Compress and optimize the model, then integrate it into the robot.
- · Establish a testing framework and conduct regular tests in short loops to collect data and experience to adjust the choices of techniques implemented

On-site Research Internship **Laboratory of Systems Engineering of Versailles** (LISV) at Paris-Saclay University

- **J**une 19 to July 26, 2023
- The internship focuses on the interpretation and analysis of EMG signals, as well as the calculation and estimation of the elbow angle using MAT-LAB. This involves data collection for the triceps and biceps muscles, both with and without a 2 kg load, as well as MVC.

Remote Application Internship CHU, Fez

- August 1 to August 31, 2022
- Development of a mobile application to solve the problem of prescription validation.

Summer Internship in China Global Summer School at Zhejiang University

- **August 1 to August 15, 2022**
- Intelligent transport and smart mobility.
- IoT and intelligent service robots.

On-site Observation Internship Floquet Monopole, Fez

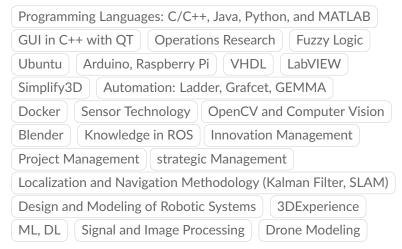
July 1 to July 31

Differential drive control using a fuzzy logic controller.

Design and simulation in VHDL of an electronic lock.

Real-time object detection with MATLAB.

SKILLS



COMPETITIONS

- OpenAl Stack Hackathon.
- African Robotics Brains22 Competition.
- The 5th edition of the National Robotics Competition (NRC) featuring Spider Robot.
- ALTEN AMSA 5 Robotic Arm Project.
- HultPrise Entrepreneurship Competition.

• Familiarized with the vehicle disc production line through various operations.

CERTIFICATIONS



Image Processing and Signal Processing MathWorks

VOLUNTEERING

Head of Robotics Workshops, Treasurer, and Trainer.

DIGICLUB

Head of External Relations

CYBERCLUB

LANGUAGES

English French Arabic Spanish