



Manuel Gomes

Master of Science
in Mechanical Engineering
by the University of Aveiro, Portugal

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GitHub
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SUMMARY

Ph.D. student with a strong desire to always learn more. Has previous experience in sensor calibration, mobile robotics, autonomous driving and robotic manipulation. Has the objective to work as a professor in the future.

EDUCATION

Degree	Institute	University	Evaluation	Year
Ph.D. in Mechanical Engineering	Department of Mechanical Engineering	University of Aveiro	N.A.	2022 - current
Integrated M.Sc. (B.Sc. + M.Sc.) in Mechanical Engineering	Department of Mechanical Engineering	University of Aveiro	17/20	2017 - 2022
ERASMUS+ Exchange Program	Faculty of Engineering Technology	University of Twente	N.A.	2020

EXPERIENCE

- University of Aveiro** March 2022 - current
Research Fellow Aveiro, Portugal
 - Research fellow in the project *AUGMANITY: Augmented Humanity*
 - Development of a general calibration tool for calibration of various sensors in a collaborative cell
 - Volumetric detection inside a collaborative cell to enhance robot path planning
- MAKEIT TECH** June 2021 - October 2021
Summer Intern Ílhavo, Portugal
 - Development of a small factor mobile robot to deliver small packages through a complex of offices
 - Projection, design, 3D printing and assembly of mechanical parts

PROJECTS

- ATOM Calibration Framework** September 2021 - current
University of Aveiro **Github**
 - General calibration framework able to accurately calibrate several sensors with distinct modalities simultaneously
 - Fully integrated into ROS, having visualization and interaction functionalities incorporated
- AutoMec AD** September 2019 - current
University of Aveiro **Github**
 - RC car able to autonomously navigate using a CNN for lane detection and template matching for signal recognition.
 - 4th place in the Portuguese Robotic's Festival 2022 Edition
 - Project coordinator since May 2021

PUBLICATIONS & TALKS

- ATOM Calibration Framework: Interaction and Visualization Functionalities** January 2023
M. Gomes, M. Oliveira, V. Santos DOI: 10.3390/s23020936
MDPI Sensors, IF (2021): 3.847
- ATOM Calibration Framework** October 2021
M. Oliveira, D. Rato, M. Gomes, D. Coelho, E. Pedrosa, N. Lau, V. Santos **Video**
ROSCON 2022, Kyoto
- A sensor-to-pattern calibration framework for multi-modal industrial collaborative cells** July 2022
D. Rato, M. Oliveira, V. Santos, M. Gomes, A. Sappa DOI: 10.1016/j.jmsy.2022.07.006
Journal of Manufacturing Systems, IF (2021): 9.498

TECHNICAL SKILLS

- **Programming Languages:** Python, Matlab & VB.net
- **Tools and Frameworks:** ROS, OpenCV, Jupyter, Visual Studio & L^AT_EX
- **Operating Systems:** Linux (Ubuntu & Arch Linux) & Windows

KEY COURSES TAKEN

- **Computer Science & Robotics:** Autonomous Vehicles, Development & Analysis of Algorithms, Industrial Systems of Vision and Perception, Intelligent Mobile Robotics, Robotic Systems Programming
- **Electrotechnical and Telecommunications:** Automation I, Automation II, Advanced Electrotechnical Instrumentation, Industrial Informatics

CERTIFICATIONS

- **Cambridge Advanced Exam C2 Level (203)** - Cambridge Assessment International Education