

# JOSE LUIS MATEZ BANDERA

Computer Vision and Robotics Engineer | PhD Candidate (finishing)

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## EDUCATION

### Ph.D. in Mechatronics Engineering

Advisor: Javier Gonzalez-Jiménez

Co-advisor: Javier Monroy

Machine Perception and Intelligent Robotics Group (MAPIR) -  
University of Malaga (Spain)

2020 – Present

### M.Sc. in Mechatronics Engineering

University of Malaga (Spain)

2019 – 2020

- Highest GPA Award
- Subjects with Honors: 3
- GPA: 9.64 / 10.0

### Degree in Robotics, Electronics and Mechatronics Engineering

University of Malaga (Spain)

2015 – 2019

- Highest GPA Award
- Subjects with Honors: 17
- GPA: 8.55 / 10.0

## ADDITIONAL EDUCATION

### Artificial Intelligence (24.20 ECTS)

Samsung Innovation Campus

Fall 2020    University of Malaga

- **Highlights:** For the final project, we presented SkinScan, a deep learning model for skin lesions classification: [GitHub Project](#).
- **Programming Languages:** Python.
- **Tools/Libraries:** TensorFlow, Keras, PyTorch, Sklearn, Numpy and Pandas.

### Machine Learning

Coursera (ID Credential: V57THSXGTWJA)

Nov. 2019

## PUBLICATIONS/PATENTS

Most relevant publications are listed here. For all publications, check my [Google Scholar profile](#).

### Journals

Cross-Detector Visual Global Localization with Coplanarity Constraints *Under Review*.

## EXPERIENCE

### R&D Computer Vision Engineer Intern

Ericsson Research. Stockholm (Sweden)

March 2023 – June 2023

- **Tasks:** Visual localization of heterogeneous devices.
- **Highlights:** Patent under review.
- **Programming Languages:** Python and C++.
- **Tools/Libraries:** OpenCV, NumPy, Pandas, Sklearn, Detectron2 (Deep Learning models), Cython, ROS2.

### Research Assistant

Machine Perception and Intelligent Robotics Group (MAPIR) -  
University of Malaga (Spain)

2019 – Present

- **Tasks:** Developing computer vision algorithms rooted on probabilistic models for robot scene understanding. Visual localization and semantic mapping.
- **Highlights:** Under a competitive FPU grant. Multiple publications in top-tier journals and international conferences.
- **Programming Languages:** Python, C++ and C#.
- **Tools/Libraries:** OpenCV, NumPy, Pandas, Sklearn, Detectron2 (Deep Learning models), ROS1/ROS2, Unity3D, PyTorch and TensorFlow, among others.

### Teaching Assistant

System Engineering and Automation Department - University of Malaga (Spain)

2021 – Present

- Automatic Control (2023-2024)
- Biomedical Systems Modelling (2021-2024)
- Robot Programming (2022-2023)

### Undergraduate Internship (Degree)

MLabs Optronics (MESUREX S.L.U.) - Technology Park of Andalusia (Spain)

Spring 2019

- **Tasks:** Developing computer vision solutions for the industry using RGB and thermal cameras.
- **Programming Languages:** C++ and Python.
- **Tools/Libraries:** OpenCV, Windows Forms, NumPy.

## LANGUAGES

Spanish

Mother tongue

English

Proficient

**Voxeland: Probabilistic Instance-Aware Semantic Mapping with Evidence-based Uncertainty Quantification**  
*Under Review.*

**Sigma-FP: Robot Mapping of 3D Floor Plans With an RGB-D Camera Under Uncertainty** In IEEE Robotics and Automation Letters, 2022.

**LTC-Mapping, Enhancing Long-Term Consistency of Object-Oriented Semantic Maps in Robotics** In Sensors, 2022.

**Efficient Semantic Place Categorization by a Robot through Active Line-of-Sight Selection.** In Knowledge-Based Systems (Elsevier), 2022.

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## **Conferences**

**Exploiting Spatio-Temporal Coherence for Video Object Detection in Robotics.** In International Conference on Computer Analysis of Images and Patterns, 2022.

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## **Patents**

**Determining Location of a Device within an Environment Comprising Planar Surfaces.** *Under Review.*