JOSE LUIS MATEZ BANDERA, PHD

AI and Computer Vision Engineer

PhD with extensive experience in computer vision, AI, ML and robotics.
Passionate about driving progress through research and practical applications.

Malaga, Spain | joseluismtzbnd@gmail.com | joseluismatez | josematez.github.io

EDUCATION

Ph.D. in Mechatronics Engineering

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

2020 – 2025

Supervisor: Javier Gonzalez-Jiménez
Co-supervisor: Javier Monroy

- **Cum Laude** and **International** mentions.

M.Sc. in Mechatronics Engineering

University of Malaga (Spain)

2019 – 2020

- **GPA:** 9.64 / 10.0 (Best GPA Award)
- **Highest Honors:** 3 out of 10 subjects
- **Honors:** 7 out of 10 subjects

B.Sc. in Robotics, Electronics and Mechatronics Engineering

University of Malaga (Spain)

2015 – 2019

- **GPA:** 8.55 / 10.0 (Best GPA Award)
- **Highest Honors:** 17 out of 42 subjects
- **Honors:** 9 out of 42 subjects

TECHNICAL COURSES

Artificial Intelligence (24.20 ECTS)

Samsung Innovation Campus

Fall 2020

- **Final Project:** SkinScan, a deep learning model for skin lesions classification.

Machine Learning

Coursera (ID Credential: V57THSXGTWJA)

Nov. 2019

LANGUAGES

Spanish
Mother tongue

English
Proficient

EXPERIENCE

Computer Vision & AI Engineer

Tupl Inc.

Nov 2024 – Current

Tasks

- Computer vision expert responsible for the design and development of the company's AI Vision product.
- Integrating state-of-the-art CV/AI techniques to build robust quality-inspection solutions for manufacturing.
- Technical assessment of incoming projects: feasibility studies, scope definition, and effort estimation.
- Direct collaboration with clients to gather requirements, deploy solutions, and ensure successful on-site adoption.

Research Assistant

MAPIR Group, University of Malaga (Spain)

2019 – Present

Tasks

- Research and development of computer vision and machine learning algorithms.
- Implementation and experimentation with cutting-edge AI/ML models.
- Teaching in computer science subjects and giving public presentations.

Highlights

- Recipient of competitive FPU grant.
- Publications in top-tier journals (RA-L, KBS) and presentations at international conferences (ICRA, CAIP).

R&D Computer Vision Engineer Intern

Ericsson Research, Stockholm (Sweden)

Mar 2023 – Jun 2023

Tasks

- Research and development of computer vision algorithms within a multidisciplinary team.
- Transfer of academic research into industrial prototypes.

Highlights

- Resulting work led to a journal publication (under review) and a patent.

TECHNICAL SKILLS

Technical Stack

Python | C++ | PyTorch | TensorFlow | Detectron2 | TensorRT | scikit-learn | OpenCV | NumPy | ROS1 / ROS2 | Docker | Kubernetes | Git | Linux | MongoDB | Jupyter

Expertise & Domains

Computer Vision | Deep Learning | Machine Learning | Robotics | Industrial Deployment

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 in Pattern Recognition*.

Voxeland: Probabilistic Instance-Aware Semantic Mapping with Evidence-based Uncertainty Quantification *Under Review in IEEE Robotics and Automation Letters*.

Sigma-FP: Robot Mapping of 3D Floor Plans With an RGB-D Camera Under Uncertainty In IEEE Robotics and Automation Letters, 2022. Presented at IEEE International Conference on Robotics and Automation (ICRA 2023).

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.

Conferences

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

Patents

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