

# Tomás Berriel Martins

tberriel.github.io

PhD Candidate in Computer Vision  
Robotics, Computer Vision & Artificial Intelligence Group  
University of Zaragoza, Spain

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## Interests and Objectives

My main area of interest lies in the use of deep learning and computer vision to enhance human spatial representations. I am particularly focused on the use of implicit scene representations and open-vocabulary semantic segmentation to complement traditional explicit representations and SLAM algorithms.

## Publications

- **[c4]SLAM&Render: A Benchmark for the Intersection Between Neural Rendering, Gaussian Splatting and SLAM.** Samuel Cerezo, Gaetano Meli, Tomás Berriel Martins, Kirill Safronov, Javier Civera (Arxiv 2025)
- **[c3] Open-Vocabulary Online Semantic Mapping for SLAM.** Tomás Berriel Martins, Martin R. Oswald, Javier Civera. (Arxiv 2024)
- **[c2] Feature Splatting for Better Novel View Synthesis with Low Overlap.** Tomás Berriel Martins, Javier Civera. Proceedings of the British Machine Vision Conference (BMVC 2024)
- **[w1-c1] Ray-Patch: An Efficient Querying for Light Field Transformers.** Tomás Berriel Martins, Javier Civera. Proceedings of the IEEE/CVF International Conference on Computer Vision Workshops & International Conference on 3D Vision (ICCVW 2023 & 3DV 2024)

## Work/Research Experience

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|--------------------------|--|
| 2022–Today<br>(4 months) | <b>Robotics, Computer Vision and Artificial Intelligence group (RoPeRT).</b><br>Predoctoral Researcher, funded by Gobierno de Aragón.<br>Research topics: Computer vision; 3D Geometry; Neural Representations would prefer to have time.<br>Advisor: Javier Civera<br>Zaragoza, Spain |
| 2024                     | <b>The Computer Vision Group, University of Amsterdam.</b><br>Visiting Researcher<br>Worked on building online open-vocabulary semantic 3D representations.<br>Supervisor: Assistant Professor Martin R. Oswald<br>Amsterdam, Netherlands  |

- 2020–2021  
(1 year) **Robotics, Perception & Real Time Group, University of Zaragoza.**  
Research Engineer  
Worked on Bayesian Neural Networks for uncertainty prediction in 360° images' layout estimation.  
Advisor: Professor Javier Civera  
Zaragoza, Spain
- 2019–2020  
(1 year) **ITAinnova.**  
Robotics Research & Development Engineer Intern  
Worked on a multidisciplinary team that developed autonomous platforms for both indoor and outdoor environments.  
Supervisor: Javier Huarte  
Zaragoza, Spain

## --- Educational Background

- 2021–Today **Doctoral Program in Systems Engineering and Computer Science.**  
**University of Zaragoza**  
Research topics: Computer vision; 3D Geometry. Representation learning.  
Advisor: Javier Civera
- 2020–2022 **Master in Robotics, Graphics, and Computer Vision.**  
**University of Zaragoza**  
Master's thesis: *Learning disentangled representations of scenes from images.*  
Advisor: Javier Civera
- 2020 **Artificial Intelligence Fundamentals.**  
**ColumbiaX, edX**
- 2015–2019 **Bachelor's Degree in Electronic and Automatic Engineering.**  
**University of Zaragoza**  
Bachelor's thesis: *Automated human actions recognition in 3D video sequences.*  
Advisor: Professor Carlos Orrite

## --- Teaching assistant

During my PhD I completed a total of 180 hours of teaching assistant spread across several years and subjects.

- 2022–2025 **Computer vision**, *Master in Robotics, Graphics and Computer Vision.*
- 2022–2024 **Machine learning**, *Master in Robotics, Graphics and Computer Vision.*
- 2023–2024 **Machine learning**, *Bachelor's Degree in Informatics Engineering.*
- 2021–2023 **Computer vision**, *Bachelor's Degree in Electronics and Automation Engineering.*
- 2021–2022 **Advanced slam**, *Master in Robotics, Graphics and Computer Vision.*
- 2021–2022 **Applications of deep learning**, *Master in Robotics, Graphics and Computer Vision.*

## --- Voluntary roles

2023–2025 **Student’s representative in the Doctoral School Steering Committee.**  
**University of Zaragoza**

2021–2025 **Student’s representative in the Quality Committee of the Doctoral Program in the Systems Engineering and Computer Science.**  
**School of Engineering and Architecture, University of Zaragoza**

2020–2021 **Student’s representative in the Masters’ Quality Assurance Committee.**  
**School of Engineering and Architecture, University of Zaragoza**

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## Languages

English    Fluent

Italian    Fluent

Spanish    Native