

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

- **[a1]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.
- **[j1] Open-Vocabulary Online Semantic Mapping for SLAM.** Tomás Berriel Martins, Martin R. Oswald, Javier Civera. Robotics and Automation Letters, 2025.
- **[c2] Feature Splatting for Better Novel View Synthesis with Low Overlap.** Tomás Berriel Martins, Javier Civera. Proceedings of the British Machine Vision Conference, 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 2023, & International Conference on 3D Vision 2024.

Work/Research Experience

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|--------------------|--|
| 2025
(12 weeks) | Google.
Student Researcher intern
From October to end of December, I will be working on the intersection between 3D geometry and Open-Vocabulary models.
Supervisor: Juanjo Gomez
Munich, Germany |
| 2022–Today | Robotics, Computer Vision and Artificial Intelligence group (RoPeRT).
Predoctoral Researcher, funded by Gobierno de Aragón.
Research topics: Computer vision; 3D Geometry; Neural Representations would prefer to have time.
Advisor: Javier Civera
Zaragoza, Spain |

- 2024
(4 months) **The Computer Vision Group, University of Amsterdam.**
Visiting Researcher
Worked on building online open-vocabulary semantic 3D representations.
Supervisor: Assistant Professor Martin R. Oswald
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

Languages

- English Fluent
Italian Fluent
Spanish Native