

# ROGER MARÍ MOLAS



Computer Vision Research Engineer — [rogermm14.github.io](https://rogermm14.github.io)

@ rogermarimolas@gmail.com ⚡ Barcelona, Spain

GitHub: [github.com/rogermm14](https://github.com/rogermm14) LinkedIn: [linkedin.com/in/rogermm14](https://linkedin.com/in/rogermm14)

Scholar: [scholar.google.com/citations?user=TgpSmIsAAAAJ](https://scholar.google.com/citations?user=TgpSmIsAAAAJ)

## EXPERIENCE

### Senior Researcher

**Eurecat**

(Jan. 2024 – Now) ⚡ Barcelona, Spain

- Computer vision and AI researcher at the multimedia technologies unit.  
Topics: Neural Radiance Fields, 3D reconstruction and diffusion models.

### Engineering Consultant

**Kayros**

(April 2019 – Dec. 2023) ⚡ Paris, France

- Provision of consulting services: expertise and software solutions in the field of 3D reconstruction from optical satellite images.

### Computer Vision Researcher

**Centre Borelli, ENS Paris-Saclay**

(Oct. 2018 – Dec. 2023) ⚡ Paris, France

- Multiple projects on multi-view 3D reconstruction (classic and neural rendering) and the calibration of camera models adapted to satellite images.

### Computer Vision Intern

**Mapillary**

(May 2018 – Aug. 2018) ⚡ Barcelona, Spain

- Coded part of a project for camera calibration from a single street-level image and monitored the training of the related neural networks.

### Computer Vision Intern

**Eurecat**

(Jan. 2017 – July 2017) ⚡ Barcelona, Spain

- Contributed to the development of a software for 3D reconstruction from multiple images, designed to be used for small objects or faces.

### Part-time Instructor

**Acadèmia CEUS**

(Jan. 2015 – July 2016) ⚡ Barcelona, Spain

- Gave support lessons on "Waves and Electromagnetism" to groups of 10-25 undergraduate students from Pompeu Fabra University.

## EDUCATION

### Doctor of Philosophy - PhD in Applied Mathematics

**Centre Borelli, ENS Paris-Saclay**

(2019 - 2022) ⚡ Paris, France

- PhD thesis: "Applications of multi-image remote sensing".  
Manuscript available at <https://www.theses.fr/2022UPASM045>.
- Thesis director: Gabriele Facciolo.
- Paris Region PhD<sup>2</sup> doctoral scholarship by Région Île-de-France.

### Master's Degree in Computer Vision

**Universitat Autònoma de Barcelona (UAB)**

(2017 - 2018) ⚡ Barcelona, Spain

- Overall grade (on a scale of 0 to 10): 9.37. Ranked 1<sup>st</sup> in the class of 2018.
- Master thesis: "Single Image Camera Calibration using Multi-task Neural Networks" (Grade: 9.9/10).
- Graduated with Honors in 7 subjects (48 ECTS credits out of 60).

### Bachelor's Degree in Audiovisual Systems Engineering

**Universitat Pompeu Fabra (UPF)**

(2013- 2017) ⚡ Barcelona, Spain

- Overall grade (on a scale of 0 to 10): 9.43. Ranked 1<sup>st</sup> in the class of 2017.
- Bachelor thesis: "Multi-view 3D Reconstruction via Depth Map Fusion for a Smartphone Application" (Grade: 10/10).
- Graduated with Honors in 26 subjects (124 ECTS credits out of 240).

## ACHIEVEMENTS



### Master in Computer Vision 2017

### Scholarship for Academic Excellence

Awarded by Catalunya-La Pedrera Foundation to the student with the best academic record that enrolled the master.



### Audiovisual Systems Engineering

### 2017 Extraordinary Award

Awarded by Pompeu Fabra University to the student ranked 1<sup>st</sup> in the class of 2017.

## PUBLICATIONS

📄 López-Antequera, M., Marí, R., Gargallo, P., Kuang, Y., Gonzalez-Jimenez, J., and Haro, G. ["Deep Single Image Camera Calibration with Radial Distortion"](#). CVPR, 2019.

📄 Marí, R., de Franchis, C., Meinhardt-Llopis, E., and Facciolo, G. ["To Bundle Adjust or Not: A Comparison of Relative Geolocation Correction Strategies for Satellite Multi-View Stereo"](#). ICCV Workshops, 2019.

📄 Marí, R., de Franchis, C., Meinhardt-Llopis, E., and Facciolo, G. ["Automatic Stockpile Volume Monitoring using Multi-view Stereo from SkySat Imagery"](#). IGARSS, 2021.

📄 Akiki, R., Marí, R., de Franchis, C., Morel, J.M., and Facciolo, G. ["Robust Rational Polynomial Camera Modelling for SAR and Pushbroom Imaging"](#). IGARSS, 2021.

📄 Marí, R., de Franchis, C., Meinhardt-Llopis, E., Anger, J., and Facciolo, G. ["A Generic Bundle Adjustment Methodology for Indirect RPC Model Refinement of Satellite Imagery"](#). IPOL, 2021.

📄 Marí, R., Ehret, T., Anger, J., de Franchis, C., and Facciolo, G. ["L1B+: A Perfect Sensor Localization Model for Simple Satellite Stereo Reconstruction from Push-Frame Image Strips"](#). ISPRS Annals, 2022.

📄 Marí, R., Facciolo, G., and Ehret, T. ["Sat-NeRF: Learning Multi-View Satellite Photogrammetry With Transient Objects and Shadow Modeling Using RPC Cameras"](#). CVPR Workshops, 2022.

📄 Marí, R., Ehret, T. and Facciolo, G. ["Disparity Estimation Networks for Aerial and High-Resolution Satellite Images: A Review"](#). IPOL, 2022.

📄 Marí, R., Facciolo, G., and Ehret, T. ["Multi-Date Earth Observation NeRF: The Detail Is in the Shadows"](#). CVPR Workshops, 2023.

## SKILLS

### Languages

- Catalan/Spanish. Native proficiency.
- English. Full professional proficiency.
- French/Italian. Professional proficiency.

### Programming

- Python, Matlab. Advanced level.
- C, C++. Intermediate level.

## INTERESTS

Computer Vision

Image Processing

3D Reconstruction

Remote Sensing

Neural Rendering

Camera Calibration