

Oscar Pueyo-Ciutad

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Resume

I am Oscar Pueyo-Ciutad, PhD Candidate in Computational Imaging supervised by [Prof. Diego Gutierrez](#) and [Prof. Albert Redo-Sanchez](#) in the [Graphics and Imaging Lab](#) at the Universidad de Zaragoza (Spain). Previously, I studied a Bachelor of Computer Engineering and a Master of Engineering in Robotics, Graphics, and Computer Vision from the Universidad de Zaragoza. During my PhD, I have visited [Princeton Computational Imaging Lab](#) for three months, supervised by [Prof. Felix Heide](#).

My research interests are related to Computational Imaging: Transient, non-line-of-sight and polarization imaging, wave optics and holography, and forward and inverse physically-based rendering.

Publications

Artifact-Resilient Real-Time Holography

2025

Victor Chu, Oscar Pueyo-Ciutad, Ethan Tseng, Florian Schiffers, Grace Kuo, Nathan Matsuda, Albert Redo-Sanchez, Douglas Lanman, Oliver Cossairt, Felix Heide

[10.1145/3763361](https://doi.org/10.1145/3763361) (SIGGRAPH Asia 2025 (Journal track))

Time-Gated Polarization for Active Non-Line-Of-Sight Imaging

2024

Oscar Pueyo-Ciutad, Julio Marco, Stephane Schertzer, Frank Christnacher, Martin Laurenzis, Diego Gutierrez, Albert Redo-Sanchez

[10.1145/3680528.3687575](https://doi.org/10.1145/3680528.3687575) (SIGGRAPH Asia 2024)

Education

Ph.D. Universidad de Zaragoza, Computational imaging

Jan 2024 – present

- Supervised by Prof. Diego Gutierrez and Prof. Albert Redo-Sanchez.

MEng Universidad de Zaragoza, Robotics, Graphics and Computer Vision

Sept 2022 – Feb 2024

- GPA: 9.73 / 10.0. #1 of the promotion.
- Specialization in Computational Imaging.

BEng Universidad de Zaragoza, Computer Engineering

Sept 2018 – July 2022

- GPA: 9.63 / 10.0. #1 of the promotion.
- Specialization in Computing.

Experience

Princeton Computational Imaging Lab, Visiting Researcher

Princeton (NJ), USA

Mar 2025 – May 2025

- Three-month visit under the supervision of Prof. Felix Heide.

POSTECH Computational Imaging Lab, Visiting Researcher

Pohang, South Korea

Dec 2024

- One-week visit for an ongoing collaboration.

French-German Research Institute of Saint-Louis (ISL), Visiting Researcher

Saint Louis, France

Dec 2024

- One-week visit for NLOS experimental captures with time-resolved systems.

Graphics and Imaging Lab, Research engineer

Zaragoza, Spain

Sept 2023 – Jan 2024

- Worked on integrating polarization into NLOS imaging.

Graphics and Imaging Lab, Research intern

Zaragoza, Spain

- Studied transient rendering and simulation of hidden scenes, polarization of light, and the basics of non-line-of-sight imaging.
 - Developed prototype algorithms combining NLOS with polarization.
- Mar 2023 – June 2023

Robotics, Perception and Real Time (RoPeRT), Scholarship researcher

- Studied fundamentals of Computer Vision and developed a topological Visual SLAM algorithm to guide the surgeon during endoscopies.
- Zaragoza, Spain
Sept 2021 – July 2022

Skills and Technologies

Wave-optics and holography: Deep learning and gradient-based optimization for Computer-Generated Holography, and fundamentals of light-wave propagation. [PyTorch](#), [PADO](#).

Non-line-of-sight (NLOS) imaging: Reconstruction and simulation of scenes hidden around a corner, developed a reconstruction algorithm integrating time-gated polarization to NLOS. [Mitsuba3](#) & [Dr.JiT](#), [mitransient](#), [TAL](#).

Transient rendering & imaging: Simulation and capture of transient data. [Mitsuba3](#) & [Dr.JiT](#), [mitransient](#).

Polarization rendering & imaging: Reflectance models, Monte Carlo integration, differentiable rendering, ellipsometry and Mueller/Stokes calculus. [Mitsuba3](#) & [Dr.JiT](#).

Computer vision / Simultaneous Localization and Mapping: Traditional and learned feature matching, Structure from Motion, Bag of Words representation, SLAM. [OpenCV](#), [DBoW](#), [ORB-SLAM3](#).

Awards and Acknowledgements

AGM Award to the best academic record

June 2025

- Award for the best academic results of all the Master's Degrees in Engineering at the Universidad de Zaragoza.

Extraordinary End-of-Master Award

June 2025

- Award for the best academic results during the Master's Degree in Robotics, Graphics and Computer Vision.

FPU Grant

Jan 2024 – Jan 2028

- Most competitive Spanish grant for funding the Ph.D.
- Four-year grant from the Spanish Ministerio de Ciencia, Innovación y Universidades.

Extraordinary End-of-Degree Award

June 2023

- Award for the best academic results during the Computer Engineering Degree.

Best Bachelor's thesis of Computer Engineering in Aragon

Apr 2023

- First prize in the [Colegio Profesional de Ingeniería Informática de Aragón](#) best Bachelor's thesis awards for my Bachelor's thesis [Place Recognition in Visual SLAM with endoscopic sequences](#), where we explored Computer Vision and SLAM techniques to build a topological map to guide the surgeon in colonoscopies.

Honors in 5 subjects during the Master of Engineering

Sept 2022 – Feb 2024

- Honors in 5 subjects during the Master of Engineering in Robotics, Graphics, and Computer Vision, including the Master's thesis.

Honors in 32 subjects during the Bachelor of Computer Engineering

Sept 2018 – July 2022

- Honors in 32 out of 39 subjects during the Bachelor of Computer Engineering, including the Bachelor's thesis.

Projects

mitransient. Transient light transport in Mitsuba 3

- Collaborated in the [mitransient](#) project, added support for time-resolved polarization rendering ([docs](#)).

Exploiting polarization in Non-Line-of-Sight imaging

- Master's thesis. Research on adding and exploiting the information encoded in polarization for NLOS imaging.
- Supervised by Prof. Albert Redo-Sanchez and Prof. Diego Gutierrez.
- Grade: 10.0 / 10.0 with honors.

Place recognition in Visual SLAM with endoscopic sequences

- Bachelor's thesis. Using computer vision point features and bags of words in appearance based topological SLAM in endoscopic sequences ([EndoMapper project](#)).
- Supervised by [Juan D. Tardos](#) and [Juan J. Gomez](#).
- Grade: 9.8 / 10.0 with honors.

Dissemination

Thesis in 3 minutes

Oct 2025

- I presented my research to the general public in only 3 minutes.

Researcher's night

Sept 2024

- We explained our research at the Graphics and Imaging Lab to the general public.

Week of Engineering and Architecture

Mar 2024

- We showed experiments to high-school students on light transport and graphics.

Researcher's night

Sept 2023

- We explained our research at the Graphics and Imaging Lab to the general public.

Languages

English (CAE - C1)

2018

- Cambridge English Level 2 Certificate in ESOL International (Advanced). Grade 186

Spanish (native)

Social Skills

Class delegate

2018 – 2022

- Delegate of our class during the Bachelor Degree of Computer Engineering.

Degree delegate

2019 – 2021

- Delegate of the Bachelor Degree in Computer Engineering.

Sports

Volleyball player - AD Cierzo proLGBT+

2025 – present

Volleyball player - AD Miguel Catalán

2023 – 2025

Volleyball player - Club Voleibol Zaragoza

2019 – 2023

Volleyball player - School of engineering and architecture

2019 – 2023