Oscar Pueyo-Ciutad

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Resume

I am Oscar Pueyo-Ciutad, a second-year PhD Candidate in Computational Imaging supervised by Prof. Diego Gutierrez and Prof. Albert Redo-Sanchez in the Graphics & Imaging Lab at Universidad de Zaragoza (Spain). Previously, I studied a Bachelor in Computer Engineering and a Master of Engineering in Robotics, Graphics and Computer Vision at 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: Non-line-of-sight and transient imaging, polarization, wave optics and holography, and forward and inverse computer graphics.

Publications

Time-Gated Polarization for Active Non-Line-Of-Sight Imaging Dec 2024

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

10.1145/3680528.3687575 (SIGGRAPH Asia 2024)

Education

Ph.D. **Universidad de Zaragoza**, Computational imaging — Jan 2024 – present

- Thesis title : Non-line-of-sight imaging using virtual wave optics
- 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.

French-Germal Research Institute of Saint-Louis (ISL), Visiting Researcher — Saint Louis, France, Dec 2023

- Experimental data capture in real time-of-flight systems.

Graphics and Imaging Lab, Research intern — Zaragoza, Spain, Mar 2023 – June 2023

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

Robotics, Perception and Real Time (RoPeRT), Scholarship researcher — Zaragoza, Spain, Sept 2021 – July 2022

- Studied fundamentals of Computer Vision and developed a topological Visual SLAM algorithm to guide the surgeon during endoscopies.

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 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 Computer Engineerning Bachelors thesis in Aragon Apr 2023

- I received the 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's Sept 2022 – Feb 2024

- I obtained honors in 5 subjects during the MEng in Robotics, Graphics, and Computer Vision, including the Master's thesis.

Honors in 32 subjects during the Bachelor's Sept 2018 – July 2022

- I obtained honors in 32 out of 39 subjects during the Bachelor's in Computer Engineering, including the Master's thesis.

Projects

Exploiting polarization in Non-Line-of-Sight imaging

- Master's thesis. Research on the usage of the information encoded in polarization in NLOS imaging.
- Supervised by Prof. Albert Redo-Sanchez and Prof. Diego Gutierrez.
- Grade: 10.0 / 10.0 with honors.
- Tools Used: Mitsuba3, DrJiT, Mitransient, Python, LaTeX

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.
- Supervised by Juan D. Tardos and Juan J. Gomez.
- Grade: 9.8 / 10.0 with honors.
- Tools Used: OpenCV, C++, Python, MATLAB, DBoW, LaTeX

Dissemination

Researcher's night Sept 2024

- We explained with other members from the Graphics and Imaging Lab our research to the general public.

Week of Engineering and Architecture Mar 2024

- We showed experiments to high-school students on light transport and Graphics with other members of the Graphics and Imaging Lab.

Researcher's night Sept 2023

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's in Computer Engineering.

Degree delegate 2019 – 2021

- Delegate of the Degree in Computer Engineering.

Sports

Volleyball player - School of engineering and architecture 2019 – 2023

Volleyball player - Club Voleibol Zaragoza 2019 – 2023

- 1st and 2nd senior male aragonese autonomic division.

Volleyball player - AD Miguel Catalán 2023 – 2025

- 1st senior male aragonese autonomic division.