María Santos Villafranca (She/Her)

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Affiliation: Predoctoral researcher at University of Zaragoza (Spain)

Work Experience

2023-Now Zaragoza, Spain	**University of Zaragoza** *Teaching Assistant* Teaching assistant of *Automatic Systems, Vision and Robotics, Computer Vision*, Flexible Automation and Robotics and Computer Graphics-Immersive Environments-Multimedia subjects
2022-Now Zaragoza, Spain	**University of Zaragoza** *Predoctoral Researcher* Visual scene interpretation for intelligent assistive devices, supervised by Dr. José J. Guerrero.
2023-2024 3.5 months Darmstadt,Germany	**Technische Universität Darmstadt** *Visiting Researcher at Visual Inference Lab* Supervised by Dr. Simone Schaub-Meyer
2021-2022 Zaragoza, Spain	**Omega CRM Consulting** *Salesforce Developer* Visualforce Pages and Lightning Components, Integration with other systems, Data Management, Testing and Debugging, Release Management, Security. Certifications: App Builder
2021 6 months Zaragoza, Spain	**University of Zaragoza** *University internships* Real-time simulator of prosthetic vision (SPV) that uses communication between a Windows computer and an Ubuntu computer through a TCP/IP socket.

Academic Service

2025	**Organizing committee of the Iberus Connect III Doctoral Student Congress (CEDIC III)**
2025	**Scientific committee of the Iberus Connect III Doctoral Student Congress (CEDIC III)**
2022-Now	**Reviewer CVPR, Journal of Neural Engineering**

Education

2022-Now Zaragoza, Spain	**Ph.D., Computer Vision** *University of Zaragoza* Visual scene interpretation for intelligent assistive devices, supervised by Dr. José J. Guerrero.
2019-2021 Zaragoza, Spain	**MSc in Industrial Engineering, specialty in Industrial Automation and Robotics.** *University of Zaragoza* Master's Thesis on Virtual reality system for 3D navigation with simulated prosthetic vision, supervised by Dr. Alejandro Pérez Yus and Dr. Jesús Bermúdez Cameo
2015-2019 Zaragoza, Spain	**BSc in Industrial Technologies Engineering** *University of Zaragoza* Bachelor's Thesis on Visual prosthesis simulator in 360 environments with virtual reality goggles, supervised by Dr. Jesús Bermúdez Cameo and Dr. José J. Guerrero

Publications

- Maria Santos-Villafranca*, Dustin Carrión-Ojeda*, Alejandro Perez-Yus, Jesus Bermudez-Cameo, Jose J Guerrero, and Simone Schaub-Meyer. Knowledge Distillation for Multimodal Egocentric Action Recognition Robust to Missing Modalities. *arXiv*, 2025

- Alejandro Perez-Yus, Maria Santos-Villafranca, Julia Tomas-Barba, Jesus Bermudez-Cameo, Lorenzo Montano-Olivan, Gonzalo Lopez-Nicolas, and Jose J. Guerrero. RASPV: A Robotics Framework for Augmented Simulated Prosthetic Vision. *IEEE Access*, 12:15251–15267, 2024. doi:10.1109/ACCESS.2024.3357400

- Maria Santos-Villafranca*, Bruno Berenguel-Baeta*, Jesus Bermudez-Cameo, Alejandro Perez Yus, and Josechu Guerrero. Convolution kernel adaptation to calibrated fisheye. In *34th British Machine Vision Conference 2023, BMVC 2023, Aberdeen, UK, November 20-24, 2023, (Oral Presentation)*

- Maria Santos-Villafranca, Julia Tomas-Barba, Alejandro Perez-Yus, Jesus Bermudez-Cameo, and Jose J Guerrero. Simulador inmersivo de visión protésica modelando estímulos espacio-temporales. *XLIV Jornadas de Automática*, 2023

- Maria Santos-Villafranca, Alejandro Perez-Yus, Jesus Bermudez-Cameo, and Jose J. Guerrero. Sistema de realidad virtual para exploración 3D con visión protésica simulada. *Jornada de Jóvenes Investigadores e Investigadoras del I3A*, 10, 2022

*Equal contribution.

COURSES

2023	ICVSS International Computer Vision Summer School
2023	BMVA Computer Vision Summer School
2023	Summer School EVIA (Escuela de Verano de Inteligencia Artificial)
2020	ISA.1x: Introducción a la visión por computador: desarrollo de aplicaciones con OpenCV (University Carlos III of Madrid, edX)
2019	Basic technician in occupational risk prevention

AWARDS

2024	*Travel Grant for Women in Data Science Conference Zurich 2024* WiDS
2023	*One month research scholarship for excellent doctoral students* Visual Inference Group, TU Darmstadt
2023	*Grants for the mobility of doctoral students by Campus Iberus* Campus Iberus
2022	*Competitive scholarship for predoctoral studies by DGA* Diputación General de Aragón (DGA)
2022	*Competitive Scholarship for research "contratos puente" by I3A* Instituto Investigación e Ingeniería (I3A)
2022	*XI Jornada de Jóvenes Jóvenes Investigadores Award for Best Scientific Contribution in the Information and Communication Technologies Division* Instituto Investigación e Ingeniería (I3A)
2021	*I3A Research Initiation Programme Scholarship* Instituto Investigación e Ingeniería (I3A)

RESEARCH GROUPS

2022	*Robotics, Computer Vision and Artificial Intelligence Group (RoPeRT)* Intelligent Image Interpretation for Visual Assistance and Enhancement

PARTICIPATION IN PROJECTS

2022	*PID2021-125209OB-I00, Aprendizaje profundo bayesiano para interacciones dinámicas aplicadas a dispositivos asistenciales visuales, DIVAD* University of Zaragoza
2022	*TED2021-129410B-I00, Omnidirectional Vision for Man-Made Scene Understanding, OVIMSU* University of Zaragoza

SKILLS

Programming: Python, Apex, Pytorch
Languages:

ENGLISH	*C1 Advanced (CAE) from Cambridge*
GERMAN	*A2 from School of Languages*
SPANISH	*Native speaker*

ADDITIONAL ACTIVITIES

• Attendance and successful completion of the examination session at the ICVSS (International Computer Vision Summer School) Sicily, July 2024
• Attendance to the Women in Data Science Conference Zürich, June 2024
• Attendance to the International Conference on Computer Vision 2023 (Paris) and presentation of an extended abstract ("Convolution kernel adaptation to calibrated fisheye") at the Women in Computer Vision Workshop (ICCV 2023), October 2023