

Daniel Martin

Last updated: May, 2024

Career

- 2024–Today **Postdoctoral Researcher**
Graphics and Imaging Lab - Universidad de Zaragoza
- 2020–2024 **PhD Programme on Computer Science**
... **Thesis:** *Computational Models of Visual Attention and Gaze Behavior in Virtual Reality*
... **Grade:** *Sobresaliente Cum Laude (With Honors)*
... **Supervised by:** *Belen Masia and Diego Gutierrez*
... **In the:** *Graphics and Imaging Lab - Universidad de Zaragoza*
- 2018–2020 **MSc on Computer Science**
Universidad de Zaragoza
- 2014–2018 **BSc on Computer Science**
Universidad de Zaragoza

Publications

Journal Publications

- [J9] **tSPM-Net: A Probabilistic Spatio-Temporal Approach to Scanpath Prediction**
Daniel Martin, Diego Gutierrez, Belen Masia
[JCR Q2] - To appear in Computers and Graphics (Proc. CEIG 2024)
DOI: <https://doi.org/xx.xxxx/xxxxxxxxxxxx>
- [J8] **SAL3D: A Model for Saliency Prediction in 3D Meshes**
Daniel Martin, Andres Fandos, Belen Masia, Ana Serrano
[JCR Q2] - The Visual Computer
DOI: <https://doi.org/10.1007/s00371-023-03206-0>
- [J7] **D-SAV360: A Dataset of Gaze Scanpaths on 360° Ambisonic Videos**
Eduarne Bernal, Daniel Martin, Sandra Malpica, Pedro J. Perez, Diego Gutierrez, Belen Masia, Ana Serrano
[JCR Q1] - IEEE Transactions on Visualization and Computer Graphics (Proc. ISMAR 2023)
DOI: <https://doi.org/10.1109/TVCG.2023.3320237>
- [J6] **Task-dependent Visual Behavior in Immersive Environments: A Comparative Study of Free Exploration, Memory and Visual Search**
Sandra Malpica, Daniel Martin, Diego Gutierrez, Ana Serrano, Belen Masia
[JCR Q1] - IEEE Transactions on Visualization and Computer Graphics (Proc. ISMAR 2023)
DOI: <https://doi.org/10.1109/TVCG.2023.3320259>
- [J5] **A Study of Change Blindness in Immersive Environments**
Daniel Martin, Xin Sun, Diego Gutierrez, Belen Masia
[JCR Q1] - IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VR 2023)
★ Best Journal Paper Award nominee ★
DOI: <https://doi.org/10.1109/TVCG.2023.3247102>

- [J4] **ScanGAN360: A Generative Model of Realistic Scanpaths for 360° Images**
Daniel Martin, Ana Serrano, Alexander W. Bergman, Gordon Wetzstein, Belen Masia
 [JCR Q1] - IEEE Transactions on Visualization and Computer Graphics (Proc. IEEE VR 2022)
 * Best Journal Paper Award *
 DOI: <https://doi.org/10.1109/TVCG.2022.3150502>
- [J3] **Multimodality in VR: A survey**
*Daniel Martin**, *Sandra Malpica**, *Diego Gutierrez*, *Belen Masia*, *Ana Serrano*
 [JCR Q1] - ACM Computing Surveys (2022)
 DOI: <https://doi.org/10.1145/3508361>
- [J2] **SST-Sal: A Spherical Spatio-temporal Approach to Saliency Prediction in 360° Videos**
Eduarne Bernal, Daniel Martin, Diego Gutierrez, Belen Masia
 [JCR Q2] - Computers and Graphics (Proc. CEIG 2022)
 DOI: <https://doi.org/10.1016/j.cag.2022.06.002>
- [J1] **Imperceptible manipulation of lateral camera motion for improved virtual reality applications**
*Ana Serrano**, *Daniel Martin**, *Karol Myszkowski*, *Diego Gutierrez*, *Belen Masia*
 [JCR Q1] - ACM Transactions on Graphics (Proc. SIGGRAPH Asia 2020)
 DOI: <https://doi.org/10.1145/3414685.3417773>

Peer-reviewed Conference Publications

- [C1] **DriveRNN: Predicting Drivers' Attention with Deep Recurrent Networks**
Blanca Lasheras-Hernandez, Belen Masia, Daniel Martin
 Proc. of the Spanish Computer Graphics Conference (CEIG), 2022
 DOI: <https://doi.org/10.2312/ceig.20221149>

Posters and Workshops

- [W2] **Auditory stimuli degrade visual performance in virtual reality**
Sandra Malpica, Ana Serrano, Julia Guerrero-Viu, Daniel Martin, Eduarne Bernal, Diego Gutierrez, Belen Masia
 ACM SIGGRAPH 2022 Posters
 DOI: <https://dl.acm.org/doi/pdf/10.1145/3532719.3543220>
- [W1] **Panoramic convolutions for 360° single-image saliency prediction**
Daniel Martin, Ana Serrano, Belen Masia
 CVPR's Fourth Workshop on Computer Vision for AR/VR (2020)
 URL: [PDF](#)

Internships

- Sep - Dec 23 **Meta Reality Labs Research (Redmond, WA)**
Research intern (Three months)
 Supervised by Dr. Michael Proulx.
- May - Sep 23 **Adobe Research (San Francisco, CA)**
Research intern (Three months)
 Supervised by Dr. Aaron Hertzmann.
- Jun - Sep 22 **Adobe Research (San Jose, CA)**
Research intern (Three months)
 Supervised by Dr. Xin Sun.



Professional Service

Program Committee Member

- Conferences ACM Symposium on Applied Perception (2022, 2023, 2024)
 Spanish Computer Graphics Conference (2022, 2023, 2024)

Reviewer

- Journals IEEE Transactions on Visualizations and Computer Graphics (2024), Computers and Graphics (2023, 2022), ACM Transactions on Graphics (2022), ACM Transactions on Applied Perception (2022), Virtual Reality (2022, 2021), IEEE Transactions on Multimedia (2022), IEEE Transactions on Mobile Computing (2022), Graphics and Visual Computing (2021), Multimedia Systems (2021), IEEE Transactions on Circuits and Systems for Video Technology (2021)
- Conferences IEEE Conference on Virtual Reality and 3D User Interfaces (2024, 2023, 2022), ACM SIGGRAPH (2024, 2023, 2022), ISMAR (2023), ACM Symposium on Applied Perception (2023, 2022), Pacific Graphics (2023), Spanish Computer Graphics Conference (2022), Eurographics (2021), MobileHCI (2021), ACM Symposium on Virtual Reality Software and Technology (2021)

Reviewing milestones

2023 IEEE VR 2023 - #1 Reviewer

I was the reviewer (among aprox. 280) who reviewed more submissions.
(<https://ieeevr.org/2023/committees/reviewers/>)

Other service

- 2022 - Today I am an External Reviewer for the Graphics Replicability Stamp Initiative
(<http://www.replicabilitystamp.org/>)

Talks

- Apr 2024 **Probabilistic and multimodal models of visual attention and perception in virtual reality**
Invited talk at Università della Svizzera italiana (USI)
Lugano, Switzerland
- Nov 2023 **Computational Models of Visual Attention and Gaze Behavior in Virtual Reality**
Invited talk at Meta Reality Labs Research
Redmond, Washington, United States
- Dec 2022 **ScanGAN360: A Generative Model of Realistic Scanpaths for 360° Images**
Invited speaker at SIGGRAPH Asia 2022
Daegu, South Korea
- Not attended due to travel issues -

Funding and Awards

- 2023 **Fulbright Predoctoral Grant**
Granted a [Fulbright Predoctoral Grant \(2024\)](#) to conduct a research in the U.S. for six months
Awarded only to the 10 best projects at national level
- Renounced -
- 2022 **Best Paper Award**
ScanGAN360: A Generative Model of Realistic Scanpaths for 360° Images
IEEE VR 2022 (TVCG Journal Track)
- 2020 - 2024 **Predoctoral Grant**
4-year competitive grant from Gobierno de Aragon (Spain). #4 of 50 applicants
- 2018 **Future Engineer**
Award to the best career on Bachelor's Computer Science from Tecnara

Teaching

- 2022 - 2023 **Modeling and Simulation of Appearance**
Master's degree in Robotics, Graphics, and Computer Vision
Universidad de Zaragoza

- 2020 - 2022 **Virtual Reality**
Master's degree in Robotics, Graphics, and Computer Vision
Universidad de Zaragoza
- 2021 - 2022 **Computer Graphics**
Bachelor's degree in Computer Science
Universidad de Zaragoza
- 2021 - 2023 **Programming Fundamentals**
Bachelor's degree in Industrial Technologies
Universidad de Zaragoza

Teaching evaluation

- 2020 - Today So far, I have received the maximum [evaluation score](#) from students (i.e., Evaluación Positiva Destacada) every academic course.

Supervision

- Ongoing **Scanpath prediction for 360° video**
Juan Lorente
BSc Thesis - Bachelor's degree in Computer Science
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- Feb 2024 **Deep learning models for 360° audiovisual saliency prediction**
Jorge Pina
MSc Thesis - Master's degree in Robotics, Graphics and Computer Vision
Grade: 9.0/10
- Sep 2023 **A framework to implement multiple redirected walking techniques in VR**
Carmen Real
BSc Thesis - Bachelor's degree in Computer Science
Grade: 9.5/10
- Sep 2023 **Top-down saliency models in VR**
Gabriel Olteanu
BSc Thesis - Bachelor's degree in Computer Science
Grade: 8.5/10
- Jun 2022 **Deep learning models for 3D mesh saliency prediction**
Andres Fandos
MSc Thesis - Master's degree in Robotics, Graphics and Computer Vision
Grade: 9.5/10
- Jun 2022 **Audiovisual saliency prediction in 360° videos**
Santiago Jimenez
BSc Thesis - Bachelor's degree in Computer Science
Grade: 9.6/10
- Feb 2022 **Modeling user behavior in dynamic 360° environments**
Eduarne Bernal
MSc Thesis - Master's degree in Robotics, Graphics and Computer Vision
Grade: 10/10 (Honorary Mention)
- Feb 2022 **Development of a data collection and visualization tool related to content exploration in VR**
Pedro Pérez
BSc Thesis - Bachelor's degree in Computer Science
Grade: 9.0/10
- Sep 2021 **Deep learning models for eye tracking data**
Fernando Peña
BSc Thesis - Bachelor's degree in Computer Science
Grade: 8.5/10

- Jun 2021 **Study of Advanced Driver Assistance Systems and a proposal for the application of eye-tracking techniques**
Blanca Lasheras
BSc Thesis - Bachelor's degree in Mechanical Engineering
Grade: 9.0/10
- Jun 2020 **Single-image depth estimation of 360° panoramas with deep learning**
Javier Gimenez
BSc Thesis - Bachelor's degree in Computer Science
Grade: 9.0/10

Other dissemination events

- 2022 **3-minutes Theses Finalist**
3-minutes dissertation of my thesis for non-expert public, *Campus Iberus, Universidad de Zaragoza*
- 2022 **European Researchers Night**
Presented our group's research activities to the attendees, *Universidad de Zaragoza*
- 2021, 2022 **NEOcom Talks**
Invited speaker - Advances on Virtual Reality for Engineering students, *Universidad de Zaragoza*