Maria Escobar

Webpage | Email | Linkedin | Github | Google Scholar

EDUCATION

PhD., Engineering, Universidad de los Andes *2021-*
Expected graduation date: March 2025

MSc., Biomedical Engineering, Universidad de los Andes *2019-2020*
Thesis: Generative Adversarial Networks for Robust Medical Image Analysis.

BSc., Biomedical Engineering, Universidad de los Andes *2015-2018*
Minor: German Language and culture.

AWARDS

- 2nd place in Visual Queries 3D Localization for Ego4D Challenges @ CVPR (2023)
- 2nd place in PNR Temporal Localization and 3rd place in Object State Change Classification for Ego4D CVPR Challenges @ CVPR (2022)
- Best GPA of graduating cohort of BME Students (2019).
- First place in the graduate national exams for BME. Seventh place nationwide (2018).

PUBLICATIONS

- BoDiffusion: Diffusing Sparse Observations for Full-Body Human Motion Synthesis. A. Castillo*, **M. Escobar***, G. Jeanneret, A. Pumarola, P. Arbeláez, A. Thabet, A. Sanakoyeu. Computer Vision for Metaverse workshop at ICCV 2023.
- EgoCOL: Egocentric Camera pose estimation for Open-world 3D object Localization@ Ego4D challenge 2023. C Forigua, **M Escobar**, J Pont-Tuset, KK Maninis, P Arbeláez. Arxiv, 2023.
- SuperFormer: Volumetric Transformer Architectures for MRI Super-Resolution. C. Forigua, **M. Escobar**, P. Arbeláez. Simulation and Synthesis workshop at the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2022.
- Video Swin Transformers for Egocentric Video Understanding @ Ego4D Challenges 2022. **M. Escobar***, L. Daza*, C. González, J. Pont-tuset, P. Arbeláez. Arxiv, 2022.
- Smart pooling: AI-powered COVID-19 informative group testing. **M. Escobar**, G. Jeanneret, L. Bravo-Sánchez, et al. Scientific Reports, 2022.
- Generalized Real-World Super-Resolution through Adversarial Robustness. A. Castillo[*], **M. Escobar**[*], A. Romero, R. Timofte, L. Van Gool, P. Arbeláez. Advances in Image Manipulation (AIM) Workshop at ICCV, 2021.
- SIMBA: Specific Identity Markers for Bone Age Assessment. C. González[*], **M. Escobar**[*], L. Daza, F. Torres, G. Triana, and P. Arbeláez. International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2020.
- LUCAS: LUng CAncer Screening with Multimodal Biomarkers. L. Daza, A. Castillo, **M. Escobar**, and P. Arbeláez. Multimodal Learning for Clinical Decision Support workshop at the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2020.
- UltraGAN: Ultrasound Enhancement Through Adversarial Generation. **M. Escobar**[*], A. Castillo[*], A. Romero and P. Arbeláez. Simulation and Synthesis workshop at the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2020.
- Hand Pose Estimation for Pediatric Bone Age Assessment. **M. Escobar**[*], C. González [*], F. Torres, L. Daza, G. Triana and P. Arbeláez. International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI), 2019 Oral presentation.
- An empirical study on Global Bone Age Assessment. F. Torres , C. González, **M. Escobar**, L. Daza, G. Triana and P. Arbeláez. International Symposium on Medical Information Processing and Analysis, 2019.

[*] denotes equal contribution.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant - Universidad de los Andes *Aug, 2018 - Present*

- Member of the Biomedical Computer Vision (BCV) group at Uniandes led by Prof. Pablo Arbeláez.
- Working on multidisciplinary teams to conduct research projects.
- Writing paper submissions for international conferences.
- Creating research projects and writing grant proposals.

Graduate Teaching Assistant - Analysis and Processing of Biomedical Images *Jan, 2019 - Aug, 2019*

- Laboratory instructor - 50 students in charge.

Undergraduate Teaching Assistant - Universidad de los Andes *Aug, 2016 - May, 2018*

- Courses: Quantitative physiology I and II, Probability and statistics, Algorithmic and Object-Oriented Programming.

RESEARCH

Egocentric Video understanding *Jan, 2022*

- Dataset and methods for egocentric vision understanding.
- Role: Team leader at Uniandes.

Smart Pooling *March, 2020*

- AI tool to enhance COVID-19 PCR molecular testing.
- Role: Team leader.

Congenital Heart Defect detection *Jan, 2020*

- Method for early diagnosis of congenital heart defects in Colombia.
- Role: Team Leader.

Image and video generation *Jan, 2019*

- Generative Adversarial Networks for diverse applications.
- Role: Team co-leader.

Bone Age Assessment *Aug, 2018*

- Deep Learning model to predict Bone Age based on hand radiographs.
- Role: Team co-leader.

SKILLS

Programming: Python, PyTorch, Matlab, and LaTeX

Languages: Spanish (Native), English (C2), German (B1).

COMMUNITY SERVICE

Volunteer reviewer *2019 - Present*

I am a volunteer reviewer for the conferences CVPR, ECCV, ICCV and MICCAI and for the journal TPAMI.

Organizing committee SASHIMI 2022 *2021 - 2022*

I was part of the organizing committee for the Simulation and Synthesis workshop at the International Conference on Medical Image Computing and Computer Assisted Intervention of 2022.

Volunteer - Fundación Con Las Manos *2019 - Present*

Staff member at "Con Las Manos", a project created in 2013 at Uniandes with the aim of giving back to a vulnerable community with the most powerful tool we all have: education. My role as a volunteer is to teach 5th graders basic math through a problem based learning framework and socio-emotional abilities through various interactive projects. I also work on the Operations area, we are in charge of the logistics behind everything that goes on in the organization.