LAURA BRAVO-SÁNCHEZ

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RESEARCH INTEREST

Understanding human social interaction and behavior through computer vision. I develop 3D human mesh estimation and, more broadly, video understanding models, with a focus on applications in healthcare. My goal is to create scalable AI systems to analyze complex social dynamics, particularly those behind parent-child interactions.

EDUCATION

PhD., Biomedical Data Science, Stanford University *2021 - 2026*

MSc., Biomedical Engineering, Universidad de los Andes *2017 - 2019*

BSc., Biomedical Engineering, Universidad de los Andes *2013 - 2017*
Minor in French Language and Culture

WORK EXPERIENCE

Naver Labs Europe - Research Intern - Supervisor: Fabien Baradel *04/2025 - 09/2025*
Universidad de los Andes - Researcher - Supervisor: Pablo Arbeláez *2019 - 2021*
T&G S.A.S - Research Scientist - Supervisor: Carlos E. Pérez *02/2019 - 05/2019*

SELECTED PUBLICATIONS

- **MicroVQA: A Multimodal Reasoning Benchmark for Microscopy-Based Scientific Research**
  L. Bravo-Sánchez*, J. Burgess*, J.J. Nirschl*, et al.*
  Accepted at CVPR (2025)
- **Automating Maternal Entropy Calculation in Parent-Child Interactions Using Computer Vision**
  Z. Wang, ***L. Bravo-Sánchez****, et al.*
  Manuscript in preparation
- **Ask, pose, unite: Scaling data acquisition for close interactions with vision language models.**
  L. Bravo-Sánchez*, J. Heo, Z. Weng, K.C. Wang, S. Yeung-Levy*
  Accepted at Emergent Visual Abilities and Limits of Foundation Models CVPRW (2025)
- **Artificial intelligencepowered 3D analysis of video-based caregiver-child interactions**
  Z. Weng, ***L. Bravo-Sánchez****, et al.*
  Science Advances (2025)
- **Diffusion-HPC: Synthetic data generation for human mesh recovery in challenging domains.**
  Z. Weng, ***L. Bravo-Sánchez****, & S. Yeung-Levy*
  International Conference on 3D Vision (2024)
- **Smart pooling: AI-powered COVID-19 informative group testing.**
  M. Escobar, G. Jeanneret, ***L. Bravo-Sánchez****, et al.*
  Scientific Reports (2022)
- **Surgical instrument grounding for robot-assisted interventions.**
  L. Bravo-Sánchez*, C. González* & P. Arbeláez*
  Computer Methods in Biomechanics and Biomedical Engineering: Imaging (2022)
- **ISINet: An Instance-Based Approach for Surgical Instrument Segmentation.**
  L. Bravo-Sánchez*, C. González* & P. Arbeláez*
  Medical Image Computing and Computer Assisted Intervention (2020)

- **Finding Four-Leaf Clovers: A Benchmark for Fine-Grained Object Localization.**
  ***L. Bravo-Sánchez**[*], A. Pardo[*], G. Perez[*], P. Arbeláez*
  Sixth Workshop on Fine-Grained Visual Categorization, CVPR (2019).

[*] denotes equal contribution.

AWARDS AND TALKS

- "How can Computer Vision guide the understanding of parent-child interactions?". Technical talk at the 2024 WiDS Worldwide conference.
- Fulbright Colombia Minciencias Scholarship recipient 2021 Cohort (3 % acceptance, $80.000 USD).
- Leader of Team Uniandes in the MISAW challenge part of MICCAI 2020. Won first place in the Activity Recognition task.
- Leader of Team Uniandes. We won 5 awards at the Robust Endoscopic Instrument Segmentation Challenge 2019 part of MICCAI 2019.
- "Totæ Lacrimæ: automatic recognition of human emotions based on micrographs of tear crystals". Art exhibition (2019).

TEACHING EXPERIENCE

Graduate Teaching Assistant - Stanford University *Spring 2023, 2024*

Graduate Teaching Assistant - Universidad de los Andes *Fall 2017, 2018*

Undergraduate Teaching Assistant - Universidad de los Andes *Fall 2016 - Spring 2017*

SERVICE AND OUTREACH

- **Volunteer interpreter** - Immigrants' Rights Clinic, Stanford University *2024 - 2025*
- **Student representative** - DBDS, Stanford University *2023 - 2024*
- **Financial officer** - Colombian Association, Stanford University *2023 - 2024*
- **Mentor** - Innovation Girls 4.0 program - Visible Hands Corporation *2015, 2020*
- **Volunteer teacher** - ColombiaCrece *2018*
- **Volunteer** - Techo Colombia *2012 - 2014*