

Jhon Edinson López Durán

Ph.D. Candidate in Computer Science

Universidad Industrial de Santander · Bucaramanga, Colombia

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RESEARCH INTERESTS

Computational imaging · Optical computing · Deep learning for image processing · Privacy-preserving vision · Compressive spectral imaging · Generative models for image editing · Hyperspectral image analysis · AI model evaluation & benchmark design

EDUCATION

- 2022 – Present **Ph.D. Candidate in Computer Science**
[Universidad Industrial de Santander \(UIS\)](#) · Bucaramanga, Colombia
Dissertation focus: Computational optics and deep learning for privacy-preserving vision systems
- 2020 – 2022 **M.Sc. in Computer Science**
[Universidad Industrial de Santander \(UIS\)](#) · Bucaramanga, Colombia
- 2015 – 2020 **B.Sc. in Computer Science**
[Universidad Industrial de Santander \(UIS\)](#) · Bucaramanga, Colombia

RESEARCH EXPERIENCE

- Apr – Oct 2025 **Research Intern**
[Rice University](#) · Houston, TX, USA (On-site)
Computational Imaging Lab · Supervisor: Prof. Ashok Veeraraghavan
Developed optical watermarking methods for image capture fingerprinting and tamper localization. This collaboration resulted in the paper NOWA, accepted as an [oral presentation at CVPR 2026](#).

HONORS & AWARDS

- 2023 – 2026 **Merit-Based Doctoral Fellowship** – Universidad Industrial de Santander
- 2022 **Best Paper Award** – IEEE International Conference on Image Processing (ICIP 2022)
- 2020 – 2022 **Merit-Based Graduate Fellowship** – Universidad Industrial de Santander
- 2015 – 2020 **Ser Pilo Paga Scholarship** – ICETEX (National merit scholarship, Colombia)

TECHNICAL SKILLS

- Languages Python, MATLAB, C++, Julia
- Frameworks PyTorch, TensorFlow, JAX, OpenCV, NumPy, SciPy
- CS Domains Algorithms & complexity · Computer vision · Deep learning systems · Signal processing · Distributed computing · Databases · Computer networks · Cybersecurity fundamentals
- Tools Git, Docker, LaTeX, Linux/HPC cluster environments

PREPRINTS

- Lopez, J., Hinojosa, C., Arguello, H., & Ghanem, B. (2025). **MambaStyle: Efficient StyleGAN Inversion for Real Image Editing with State-Space Models.** *arXiv:2505.15822*.

JOURNAL PUBLICATIONS

- Arguello, P., Lopez, J., Sanchez, K., Hinojosa, C., Rojas Morales, F., & Arguello, H. (2024). **Learning to Describe Scenes via Privacy-Aware Designed Optical Lens.** *IEEE Transactions on Computational Imaging*, 10, 1069–1079.
- Lopez, J., Vargas, E., & Arguello, H. (2024). **Depth Estimation from a Single Optical Encoded Image using a Learned Colored-Coded Aperture.** *IEEE Transactions on Computational Imaging*, 10, 752–761.
- Lopez, J. et al. (2021). **Efficient Subspace Clustering of Hyperspectral Images using Similarity-Constrained Sampling.** *Journal of Applied Remote Sensing*, 15(3), 036507.

CONFERENCE PROCEEDINGS

- Vargas, E., Lopez, J., Arguello, H., & Veeraraghavan, A. (2026). **NOWA: Null-space Optical Watermark for Invisible Capture Fingerprinting and Tamper Localization [Oral].** *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*.
- Lopez, J., Hinojosa, C., Arguello, H., & Ghanem, B. (2024). **Privacy-Preserving Optics for Enhancing Protection in Face De-identification.** *IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, pp. 12120–12129.
- Lopez, J., Vargas, E., Jerez, A., & Arguello, H. (2024). **Low-Cost Stereoscopic Optical-Coding Design for Depth Estimation Using End-to-End Optimization.** *ECCV Workshops (9)*, pp. 415–430.
- Perez, F., Lopez, J., & Arguello, H. (2024). **Privacy-Preserving Deep Learning Using Deformable Operators for Secure Task Learning.** *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 5980–5984.
- Arias, K. et al. (2023). **SDI-PixCar: Single Snapshot Compressive Spectral Depth Imaging via Pixelated Carrier.** *LatinX in AI Workshop (NeurIPS)*.
- Arguello, P., Lopez, J. et al. (2022). **Optics Lens Design for Privacy-Preserving Scene Captioning.** *IEEE International Conference on Image Processing (ICIP)*, pp. 3551–3555.
- Lopez, J. et al. (2022). **Depth Estimation Using a Monocular Encoded Acquisition System.** *Latin American Conference on Computational Photography (CLICAP)*.
- Lopez, J. et al. (2021). **Fast Subspace Clustering Algorithm with Efficient Similarity-Constrained Sampling for Hyperspectral Images.** *IEEE Machine Learning for Signal Processing Workshop (MLSP)*, pp. 1–6.
- Lopez, J. et al. (2018). **Numerical Solution of Laplace's Equation for the Magnetic Scalar Potential in the SARA Model.** *XXVII National Congress of Physics, Colombia*.