Romario Gualdrón-Hurtado

Romario Gualdrón-Hurtado graduated Cum Laude from the Systems Engineering program in 2023 at the Universidad Industrial de Santander. His undergraduate thesis received the Outstanding Undergraduate Thesis Award. In the same year, he was awarded the IEEE Signal Processing Society (SPS) Scholarship.

He is currently pursuing a Master's degree in Systems Engineering at the Universidad Industrial de Santander. His research interests include computational imaging, high dimensional signal coding and processing, deep learning, statistical signal processing, and numerical optimization using stochastic algorithms.

CONTACT

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EDUCATION

Bachelor of Science in Systems Engineering   *2019-2023*
Universidad Industrial de Santander (UIS), Colombia.

Master of Science in Systems Engineering   *2023-Present*
Universidad Industrial de Santander (UIS), Colombia.

PROFESSIONAL EXPERIENCE

Universidad Industrial de Santander, Bucaramanga, Colombia   *2023-Present*
Teaching Assistant for Undergraduate Courses in Numerical Analysis.

Universidad Industrial de Santander, Bucaramanga, Colombia   *May-Jul 2023*
Research Engineer in the Project: Optical-computational coded image acquisition system for privacy preservation and action recognition in clinical environments.

PROFESSIONAL ACTIVITIES

SPS Chapter for STSIVA   *2024*
Organized and reviewed papers, and led promotional activities to boost interest in signal processing throughout Colombia, enhancing the quality and visibility of the International Symposium on Signal Processing, Imaging, and Computer Vision (STSIVA).

PRIZES AND AWARDS

SPS Scholarship Recipient   *2023-Present*
IEEE Signal Processing Society.

Cum Laude   *2023*
Universidad Industrial de Santander (UIS), Colombia. GPA: 4.72/5.0

Outstanding Undergraduate Thesis   *2023*
Author of the Undergraduate Thesis: Iterative algorithm for spectral image reconstruction considering optical system mismatch using a reinforcement regularizer
Universidad Industrial de Santander, Colombia.

National Professional Exams   *2023*
Percentile of 100 in "Scientific Thinking - Mathematics and Statistics," 99 in "Quantitative Reasoning," 98 in "Engineering Project Formulation," and 97 in English.

Recognition for Academic Excellence as Research Student   *2022*
High Dimensional Signal Processing (HDSP) research group, Universidad Industrial de Santander, Colombia.

Distinguished Student   *2019-2022*
Universidad Industrial de Santander (UIS), Colombia.

National Secondary School Exams *2018*
Achieved a 100th percentile in all areas, earning a scholarship for academic excellence.

National PISA Test Competition *2017*
First place among 31 top students in Colombia.

RESEARCH EXPERIENCE

Researcher, High Dimensional Signal Processing (HDSP) Group *2022-Present*
Universidad Industrial de Santander, Colombia.

JOURNAL PAPERS

1. **R. Gualdrón-Hurtado**, H. Arguello, J. Bacca. "Deep Learned Non-Linear Propagation Model Regularizer for Compressive Spectral Imaging." IEEE Transactions on Computational Imaging, (2024).

CONFERENCE PAPERS

1. **R. Gualdrón-Hurtado**, R. Jacome, S. Urrea, H. Arguello, L. Gonzalez. "Learning Point Spread Function Invertibility Assessment for Image Deconvolution." 2024 32st European Signal Processing Conference (EUSIPCO), 1-5, (2024).

2. **R. Gualdrón-Hurtado**, H. Garcia, H. Arguello, J. Bacca. "Learning a Spatially-Variant Propagation Model for Compressive Spectral Imaging." Computational Optical Sensing and Imaging, CTh3B. 2 (COSI), (2023).

3. **R. Gualdrón-Hurtado**, J. Bacca, H. Arguello. "Compressive Spectral Image Reconstruction by using a Deep Image Prior with a Mismatch Regularizer." Computational Optical Sensing and Imaging, CW4B. 3 (COSI), (2022).

RESEARCH PROJECTS

1. **Undergraduate Thesis:** "Iterative algorithm for spectral image reconstruction considering optical system mismatch using a reinforcement regularizer"
Role: Main Researcher.

2. **UIS project:** "Optical-computational coded image acquisition system for privacy preservation and action recognition in clinical environments."
Role: Research Engineer.

3. **Collaboration UIS-AFOSR:** "Infrared color-coded aperture optimization for object tracking and spectral classification."
Role: Student Researcher.

4. **Computational Optics Learning Library (COLIBRI):** "Colibri is a PyTorch library in development for solving computational imaging tasks where optical systems and state-of-the-art deep neural networks are implemented to be easily used or modified for new research ideas."
Role: Member.

SKILLS </>

Advanced	Intermediate	Basic
Python, Matlab	R, C++, HTML, CSS	Java, JavaScript

LANGUAGES

Spanish	*Native Language*
English	*Advanced*