

Andrés Romero

Head of AI at Haxion · Computer Vision & Generative AI · Bonn, Germany

me@afromero.co [Google Scholar](#) [GitHub](#) [LinkedIn](#) afromero.co 14 papers · 2,196 citations

I am a machine learning and computer vision expert with over 9 years of experience, currently serving as Head of AI at Haxion, where I lead the development of cutting-edge generative AI products. I specialize in Diffusion Models, Large Language Models, and Neural Rendering, with proven expertise in 3D human avatars, computational photography, and synthetic data generation.

At Haxion, I direct a team of 9 engineers developing two products: a controllable image/video generation platform using advanced diffusion models that provides users with precise creative control, and a camera-based 3D editing system that enables natural language interaction with 3D scenes through point clouds and Gaussian splatting technology.

My research background includes pioneering work in facial expression generation using GANs during my PhD, followed by postdoctoral research at ETH Zürich focusing on image synthesis and video editing. I have successfully bridged academic research with practical applications, contributing to open-source projects and organizing major computer vision challenges at top-tier conferences.

EXPERIENCE

Head of AI

2022 – Present

Haxion · California (Remote)

Leading AI team of 9 engineers at a 12-person startup. Two products: (1) Synthetic Data Platform — generates training datasets using diffusion models for dangerous scenarios, fire detection, etc. (2) Interactive Scene Reconstruction — mobile capture '3D reconstruction (LiDAR + point clouds + Gaussian Splatting) ' natural language queries via LLM.

Senior Computer Vision Developer

2022 – 2023

Gixel GmbH · Bonn, Germany

3D avatars, NeRF-based novel view synthesis, real-time face tracking and animation.

Postdoctoral Researcher

2019 – 2022

ETH Zurich — Computer Vision Lab (CVL) · Zurich, Switzerland

Research under Luc Van Gool and Radu Timofte. Super-resolution, image synthesis, video editing, inpainting. Published at CVPR, ICCV, ECCV, WACV, ACCV.

Computer Vision Consultant

2019

Centro Nacional de Consultoría (CNC) · Bogota, Colombia

Advised on computer vision solutions including counting and tracking vehicles for toll highways and analyzing walking consumer behavior for car dealerships.

PhD Researcher & Teaching Assistant

2016 – 2019

Universidad de los Andes · Bogota, Colombia

GANs for facial expression recognition and image-to-image translation. Taught computer vision to 80 graduate students. Advisor: Pablo Arbelaez.

Academic Research Guest

2018

ETH Zurich · Zurich, Switzerland

Six-month research internship under Radu Timofte. Resulted in SMIT paper published at ICCV 2019 Workshop.

Research Assistant

2014 – 2016

Universidad de los Andes — CINFONIA Lab · Bogota, Colombia

MSc in Biomedical Engineering. Real-time eye detection, emotion recognition via deep learning.

EDUCATION

PhD in Engineering

2016 – 2019

Universidad de los Andes · Bogota, Colombia

Thesis: GANs for Facial Expression Recognition (Advisor: Pablo Arbelaez)

MSc in Biomedical Engineering

2014 – 2016

Universidad de los Andes · Bogota, Colombia

BSc in BioEngineering

2007 – 2013

Universidad de Antioquia · Medellin, Colombia

INDEPENDENT PROJECTS

trajviz

Fast 3D camera trajectory video renderer using NumPy + OpenCV 'ffmpeg. Visualize camera paths in 3D space. Published on PyPI.

[GitHub](#) [PyPI](#)

DiffLogTest

Reproducible unittest framework for team environments — compares outputs across machines. Published on PyPI.

[GitHub](#) [PyPI](#)

Diffusion Models Tutorial

Toy diffusion model on MNIST with Classifier-Free Guidance and SDS inpainting. Educational resource.

[GitHub](#)

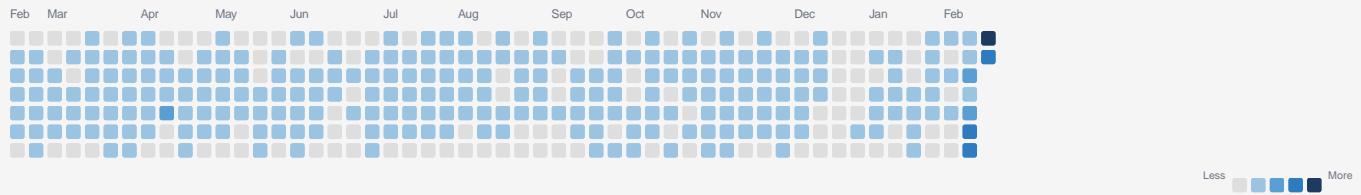
PixelCache

Seamless image data transfer between NumPy, PyTorch, and Pillow. Published on PyPI.

[GitHub](#) [PyPI](#)

@affromero

250 contributions in the last year



SELECTED PUBLICATIONS (14 PAPERS · 2,196 CITATIONS)

RePaint: Inpainting using Denoising Diffusion Probabilistic Models

Andreas Lugmayr, Martin Danelljan, Andrés Romero, Fisher Yu, Radu Timofte, Luc Van Gool

CVPR 2022 · 1896 citations

[arXiv](#) [Code](#)

SMILE: Semantically-guided Multi-attribute Image and Layout Editing

Andrés Romero, Luc Van Gool, Radu Timofte

ICCV 2021 Workshop · 7 citations

[arXiv](#)

DeepSEE: Deep Disentangled Semantic Explorative Extreme Super-Resolution

Marcel C. Bühler, Andrés Romero, Radu Timofte

ACCV 2020 (Oral) · 34 citations

[arXiv](#) [Code](#)

SMIT: Stochastic Multi-Label Image-to-Image Translation

Andrés Romero, Pablo Arbelaez, Luc Van Gool, Radu Timofte

ICCV 2019 Workshop · 67 citations

[arXiv](#) [Code](#)

GANmut: Learning Interpretable Conditional Space for Gamut of Emotions

Andrés Romero, Radu Timofte, Luc Van Gool

CVPR 2021 · 27 citations

[arXiv](#)

Self-Supervised Shadow Removal

Andrés Romero, Radu Timofte, Luc Van Gool

arXiv 2020 · 13 citations

[arXiv](#)

SESAME: Semantic Editing of Scenes by Adding, Manipulating or Erasing Objects

Andrés Romero, Luc Van Gool, Radu Timofte

ECCV 2020 · 81 citations

[arXiv](#)

AWARDS

Google Research Awards for Latin America

2015, 2016, 2017

3 consecutive years — only Colombian researcher to achieve this.

Swiss Government Excellence Scholarship

2021

Secured grant for Colombian PhD student at ETH Zurich.

Ingeniero Sembrador de Estrellas

2018

Universidad de Antioquia recognition award.

SKILLS

Programming:

Python (Expert), PyTorch (Expert), TensorFlow (Advanced), C/C++ (Intermediate)

Reviewer:

CVPR, ECCV, ICCV, ACCV, TPAMI, Computers & Graphics

WORKSHOP ORGANIZING

NTIRE22 Image Inpainting Challenge

CVPR 2022

Main Organizer

Mobile Real-Time Video Super-Resolution

CVPR 2021

Co-Organizer

Extreme Image Inpainting Challenge

ECCV 2020

Co-Organizer

Languages:

Spanish (Native), English (Fluent), Portuguese (Intermediate), German (Basic)

Interests:

Diffusion Models, 3D Reconstruction, Gaussian Splatting, GANs, Image-to-Image Translation, Image Editing