About me

I am a naturally curious and motivated researcher who enjoys exploring complex problems and continuously learning along the way. I take a hands-on approach to my work, always striving to understand not just how things work, but why. I truly appreciate discussions that challenge my perspective and help me grow, and I see collaboration as essential to refining ideas and making meaningful progress. I am always open to learning, questioning assumptions to confront confirmation bias, and improving both my skills and my understanding of the field.

CONTACT ME

LinkedIn

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Google Scholar

Spain

GitHub

EDUCATION

PhD student
University of Alicante
2023 - now

Master in Data Science & AI
University of Alicante
2021 - 2022

Computer Science degree
University of Alicante
2017 - 2021

SKILLS

- Neural Networks
- Transformers, CNNs, RNNs, GANs, AEs, Diffusion Models, etc.
- Document Analysis
- Python
- PyTorch
- Docker
- Kubernetes
- Tensorflow
- C/C++
- High agency
- Communication

Carlos Garrido

PhD student

WORK EXPERIENCE

Software Engineer @ Mosaiqo Software Development 2018 - 2019

During my third year of university, I worked as a Software Engineering intern focusing on backend development. I collaborated with cross-functional teams to design and implement server-side logic and ensure seamless integration with front-end services.

Student intern at PRAIG @ University of Alicante 2019 - 2020

Student intern at PRAIG (Pattern Recognition and Artificial Intelligence Group) at University of Alicante. Work/papers done in this year:

- "***Continual learning for document image binarization***" **(1st author)** at 26th International Conference on Pattern Recognition **(ICPR).**
  - Hypernetworks for binarization of documents in a sequential-learning scenario.
  - I presented as my final degree/thesis project (10/10 w. honours).
- ***"Region-based layout analysis of music score images"*** **(2nd author)** at **Expert Systems with Applications**
  - Studied the performance of Object Detection for Layout Analysis on musical scores.
  - Influence of Layout Analysis in transcription tasks + Data generation methods.

Researcher at PRAIG @ University of Alicante 2021 - 2023

I worked as a researcher for one year in the project "Graph-based neural models for optical score recognition". I developed an image-to-graph transcription system for subsequent use in music score recognition applications. Work/papers:

- ***"A holistic approach for image-to-graph: application to optical music recognition"*** **(1st author)** at International Journal on Document Analysis and Recognition **(IJDAR)**:
  - Propose image-to-graph approach for recognizing musical scores as sequential task.

PhD student @ University of Alicante 2023 - now

I am starting my third year as PhD student specializing in Deep Learning, with a focus on Domain Generalization and its applications in Handwritten Text Recognition (HTR). My research explores techniques to enhance model robustness in out-of-distribution scenarios, analyzing key factors that influence generalization. I am particularly interested in the role of data-efficient architectures, synthetic data, self-supervised learning, and generative models in improving adaptability across diverse domains.

Papers/work during my PhD:
2nd author (equal contribution)

- "**Efficient Approaches for Notation Assembly in OMR"** at **ISMIR 2023:**
  - Neural network approaches to improve the reconstruction of musical notation by optimizing the retrieval of syntactic relationships between symbols.
- ***"Spatial context-based self-supervised learning for Handwritten Text Recognition"*** **Accepted at Pattern Recognition Letters (PRL):**
  - Developed spatial-based SSL methods for Handwritten Text Recognition.

First author:

- **"On the Generalization of Handwritten Text Recognition Models"** at **CVPR 2025**. Accepted at Computer Vision and Pattern Recognition. Two-author paper.
  - I analyzed the generalization of HTR models, evaluating 8 architectures across multiple datasets and languages. I identified key factors affecting out-of-distribution (OOD) performance and showed that OOD errors can be reliably estimated, offering insights for improving HTR robustness.
- ***"Handwritten Text Recognition: A Survey"***. Submitted to **IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI).** Three-author paper.
  - I conducted a comprehensive review of HTR, covering key methods, benchmarks, and challenges.. I provided insights into advancements and future directions.