

Antonio Ríos Vila

POST-DOCTORAL RESEARCHER

Alicante, Spain

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Education

Ph.D in Computer Science

Alicante, Spain

UNIVERSITY OF ALICANTE

Oct. 2021 - July 2024

- Cum Laude result and International Mention achieved.
- Generalitat Valenciana competitive PhD FPU grant (ACIF/365)
- “End-to-end Optical Music Recognition Beyond Staff-Level Transcription”, supervised by Jorge Calvo-Zaragoza and José M. Iñesta
- Visiting researcher at the DDMAL laboratory from the McGill University, Canada to work on simultaneous music and lyrics transcription in music documents
- Visiting researcher at the LITIS laboratory University from the Rouen University, France to work on full-page transcription of pianoform music documents

MSc in Data Science, 9.62/10

Alicante, Spain

UNIVERSITY OF ALICANTE

Sep. 2020 - June 2021

- “Development of a complete Optical Music Recognition workflow”, supervised by Jorge Calvo-Zaragoza and José M. Iñesta
- 4 distinctions, one of them in the end-of-master project
- Best academic record on my class

Bachelor in Multimedia Engineering, 8.70/10

Alicante, Spain

UNIVERSITY OF ALICANTE

Sep. 2015 - June 2020

- “ReadSCO: Open-Source Web-based Optical Music Recognition Tool”, supervised by Jorge Calvo-Zaragoza and José M. Iñesta
- 2 distinctions

Experience

University of Alicante

Alicante, Spain

POST-DOCTORAL RESEARCHER

Oct. 2021 - Ongoing

- Extension of the Generalitat Valenciana competitive PhD FPU grant (ACIF/365).
- Post-doctoral Orientation Program.
- Research mainly focused in Sheet Music Information Retrieval.
- Supervision of Ph.D theses about Optical Music Recognition.

University of Alicante

Alicante, Spain

PRE-DOCTORAL RESEARCHER

Oct. 2021 - June 2024

- Generalitat Valenciana competitive PhD FPU grant (ACIF/365).
- Main research in end-to-end transcription and information retrieval of music documents.
- Covered topics in Document Image Analysis, mainly Handwritten Text Recognition.
- Published at several conferences and indexed journals.
- Teaching assistant in bachelor and master courses.
- Supervision of end-of-degree projects about Deep Learning applications.

Pattern Recognition and Artificial Intelligence Group

Alicante, Spain

STUDENT INTERN

Mar. 2021 - Jun. 2021

- University of Alicante grant recipient to develop my end-of-master project.
- Worked on the application of Machine Translation techniques to complete Optical Music Recognition pipelines.
- Published a journal paper in an Optical Music Recognition special issue (Applied Sciences) and in a conference (ICDAR) as first author.

Pattern Recognition and Artificial Intelligence Group

Alicante, Spain

RESEARCH ENGINEER

Sep. 2019 - Mar. 2021

- Project “Handwritten Spanish Music Heritage Preservation by Automatic Transcription” (HISPAMUS) - TIN2017-86576-R.
- Full-stack development of an internet-based OMR application for musicologists with deep learning technologies.
- Researched on state-of-the art end-to-end transcription and document analysis models.
- Published at ICFHR 2020.

Freelance

Alicante, Spain

WEB DEVELOPMENT

Mar. 2018 - Sep. 2019

- Full-stack web development for particular clients.
- Collaborated with University of Alicante research projects.
- Mainly focused on database interaction.

Skills

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|-----------------------------|---|
| Machine Learning | Image transcription (OCR, HTR, OMR) · CNN, RNN, Transformer |
| Machine Learning Frameworks | PyTorch, Tensorflow, Keras, Scikit-learn, NumPy, Pandas |
| Programming | Python, LaTeX, TypeScript, JavaScript, C, C++, Java, HTML, CSS, PHP, Rust |
| Web Frameworks | Node.js, Laravel, Spring Boot, Angular, Vue.js, Bootstrap, Materialize |
| DevOps | Docker, Docker Compose, Kubernettes (basic) |
| Languages | Spanish (native), English (fluent), French (notions) |

Awards

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| 2022 | 1st Place , IV Desafio Aporta, “El valor del Dato para la salud y el bienestar de los ciudadanos” - Spanish Ministry for Digital Transition and Public Function and Data.gob | Madrid, Spain |
| 2021 | 1st Place , 1st Generalitat Valenciana Datathon in the Tourism Category | Valencia, Spain |

Selected Publications

End-to-End Full-Page Optical Music Recognition for Pianoform Sheet Music

ANTONIO RÍOS-VILA, JORGE CALVO-ZARAGOZA, DAVID RIZO, THIERRY PAQUET

International Journal on Computer Vision (pending review) 

Sheet Music Transformer: End-To-End Optical Music Recognition Beyond Monophonic Transcription

ANTONIO RÍOS-VILA, JORGE CALVO-ZARAGOZA, THIERRY PAQUET

ICDAR 2024 

A transformer approach for polyphonic audio-to-score transcription

M. ALFARO-CONTRERAS, ANTONIO RÍOS-VILA, J.J VALERO-MAS, JORGE CALVO-ZARAGOZA

ICASSP 2024 (Accepted) 

End-to-End page-Level assessment of handwritten text recognition

ENRIQUE VIDAL, ALEJANDRO H. TOSELLI, ANTONIO RÍOS-VILA, JORGE CALVO-ZARAGOZA

Pattern Recognition. 142: 109695. 2023

End-to-end optical music recognition for pianoform sheet music

ANTONIO RÍOS-VILA, DAVID RIZO, JOSÉ M. IÑESTA, JORGE CALVO-ZARAGOZA

Int. J. Document Anal. Recognit. 26(3): 347-362. 2023 

A Holistic Approach for Aligned Music and Lyrics Transcription

JUAN C. MARTINEZ-SEVILLA, ANTONIO RÍOS-VILA, FRANCISCO J. CASTELLANOS, JORGE CALVO-ZARAGOZA

ICDAR 2023 

End-to-End Full-Page Optical Music Recognition for Mensural Notation

ANTONIO RÍOS-VILA, JOSÉ M. IÑESTA, JORGE CALVO-ZARAGOZA

ISMIR 2022 

Few-shot symbol classification via self-supervised learning and nearest neighbor

M. ALFARO-CONTRERAS, ANTONIO RÍOS-VILA, J.J VALERO-MAS, JORGE CALVO-ZARAGOZA

Pattern Recognition Letters. 2022 

Program Committees

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|------|--|----------|
| 2023 | Reviewer , Pattern Analysis and Applications Special Issue on IbPRIA 2023 | Alicante |
| 2023 | Organizer & Reviewer , IbPRIA Conference | Alicante |
| 2022 | Local Organizer , ELLIS Doctoral Symposium | Alicante |
| 2021 | Organizer , MEC Conference | Alicante |