

Guillem Cortès Sebastià

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Experience

Research Engineer

BMAT

Barcelona, ES

Mar 2024 – present

- Develop innovative research-based solutions and models that power BMAT's products for music identification, musical entities linking via metadata, and large-scale information extraction.

Research PhD Internship

Deezer

Paris, FR

Sept 2023 – Feb 2024

- Audio Fingerprinting for DJ mixes. Robustness to extreme time-stretching.
- New hybrid approach using peaks + neural networks using contrastive learning.
- Supervisors: Benjamin Martin and Romain Hennequin.

Research Engineer (Industrial PhD)

BMAT

Barcelona, ES

Oct 2020 – Aug 2023

- Industrial PhD on Audio Fingerprinting.
- Working on background music identification in the context of broadcast monitoring.

Research Assistant

School of Informatics, University of Edinburgh

Edinburgh, GB

Jan 2020 – Aug 2020

- Assessing robustness to noise of end-to-end and cascade speech translation systems.

Software Developer

BMAT

Barcelona, ES

Mar 2018 – Jan 2020

- Developing and maintaining the app used to compile the charts in more than 30 territories.

Research Assistant

Telefónica I+D

Barcelona, ES

May 2017 – Mar 2018

- Novel biometric authentication end-to-end system using PPG biosensors and CNNs.

Education

Music Technology Group, Universitat Pompeu Fabra

PhD in Information and Communication Technologies

Barcelona, ES

Dec 2020 – Feb 2025

- Dissertation: [Music Identification with Audio Fingerprinting: An Industrial Perspective](#)
- Supervisors: Emilio Molina (BMAT) & Xavier Serra (MTG-UPF)

Universitat Politècnica de Catalunya

MSc in Advanced Telecommunication Technologies

Barcelona, ES

Sept 2018 – Sept 2020

- Mention in [Deep learning for Multimedia Processing](#)
- Dissertation: *Towards Robust End-to-End Speech Translation*
- Supervisors: Barry Haddow (UEDIN) & Marta R. Costa-Jussà (UPF)

Universitat Politècnica de Catalunya

BSc in Telecommunications Technologies and Services Engineering

Barcelona, ES

Sept 2013 – May 2018

- Dissertation: End-to-End photoplethysmography-based biometric authentication system by using deep neural networks
- Supervisors: Jordi Luque (Telefónica I+D) & Antonio Bonafonte (UPC)

Escola de Música Creu Alta

Professional degree in classical guitar

Sabadell, ES

Sept 2007 – June 2019

Selected Publications

Enhanced television broadcast monitoring with source separation-assisted audio fingerprinting: A case study Oct 2025

Guillem Cortès-Sebastià, Marius Miron, Emilio Molina, Alex Ciurana, Xavier Serra
[10.1007/s11042-025-21080-x](https://doi.org/10.1007/s11042-025-21080-x) (Multimedia Tools and Applications)

PeakNetFP: Peak-based Neural Audio Fingerprinting Robust to Extreme Time Stretching Sept 2025

Guillem Cortès-Sebastià, Benjamin Martin, Emilio Molina, Xavier Serra, Romain Hennequin
[10.48550/arXiv.2506.21086](https://doi.org/10.48550/arXiv.2506.21086) (ISMIR)

Enhancing Neural Audio Fingerprint Robustness to Audio Degradation for Music Identification Sept 2025

R. Oğuz Araz, *Guillem Cortès*, Emilio Molina, Joan Serrà, Xavier Serra, Yuki Mitsufuji, Dmitry Bogdanov
[10.48550/arXiv.2506.22661](https://doi.org/10.48550/arXiv.2506.22661) (ISMIR)

BAF: An audio fingerprinting dataset for broadcast monitoring Dec 2022

Guillem Cortès, Alex Ciurana, Emilio Molina, Marius Miron, Owen Meyers, Joren Six, Xavier Serra
[10.5281/zenodo.7372162](https://doi.org/10.5281/zenodo.7372162) (ISMIR)

Soundata: Reproducible use of audio datasets June 2024

Magdalena Fuentes, Genís Plaja-Roglans, *Guillem Cortès-Sebastià*, Tanmay Khandelwal, Marius Miron, Xavier Serra, Juan Pablo Bello, Justin Salamon
[10.21105/joss.06634](https://doi.org/10.21105/joss.06634) (JOSS)

Open-source Projects I Contribute to

Mirdata

[github](#)

- CI/CD GitHub Actions migration
- Increase python and OS versions coverage
- Migrating Soundata's changes to Mirdata

Soundata

[github](#)

- Extend and improve documentation
- Fix the packaging
- Dataset versions handling
- Remote indexes
- CI/CD GitHub Actions migration
- Increase python and OS versions coverage

Additional Experience and Awards

Teaching: Probability hands-on sessions for the Computer Engineering Bachelor's program at UPF

Award: Chirp challenge winner - Abbey Road Hackathon. [Press release](#)

Voluntary work: *Voluntariat per la Llengua*, a program to help Catalan learners practice the language through conversation

Filming: Worked with *Menos Cabeza Más Corazón* agency produced documentaries about Valentí Sanjuan participation in '[Ultra Sierra Nevada 2016](#) and [Powerade MTB series non-stop Madrid-Lisboa 2016](#)

Other

Languages: English, Catalan, Spanish

Technologies: Python, C/C++; ML libraries (Tensorflow, PyTorch, scikit-learn, etc.), Django, SQL; Docker, AWS, git; GitHub Actions, Jenkins and circleCI