# Pedro Ramoneda

## Researcher, Pianist and Engineer.

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My PhD focuses on modeling piano performance difficulty from multiple modalities using pedagogically grounded representations, under the supervision of Prof. Xavier Serra. I apply sequence modeling techniques inspired by NLP to music data, and have created datasets for piano difficulty integrated into mirdata, where I am a core contributor. I emphasize reproducibility, sharing demos and code with my publications. This modeling of difficulty also supports the structuring of large music collections and the development of generative models that create personalized sheet music for students. My broader research interests include multimodal and explainable ML, generative modeling, and human-centered AI. More at my website.

## Experience

### Early Stage Researcher and Teacher Assistant
**Music Technology Group - Universitat Pompeu Fabra**
2021 – Currently | Barcelona, Spain

### Research Internship - Music Generation for Education
**Yamaha R&D**
Jan 2025 – March 2025 | Yokohama, Japan

### Research Internship - Automatic Music Generation
**Sony CSL - Tokyo**
Jun 2023 – Sept 2023 | Remote

### Research Internship - mirdata's dev & Repovizz data curator
**Music Technology Group - Universitat Pompeu Fabra**
2020 – 2021 | Barcelona, Spain

### Piano teacher
**High school: "El Salvador"**
2014 – 2016 | Zaragoza, Spain

## Education

### PhD in Information technology
**Universitat Pompeu Fabra**
2021 – ongoing

### Master in Sound and Music Technology
**Universitat Pompeu Fabra**
2020 – 2021

### BSc Computer Science Engineering
**Universidad de Zaragoza**
2015–2020

### BMus Piano Performance, (Paused)
**CSMA**
2016–2018

### Professional Degree Piano Performance
**CPMZ**
2009–2015

## Selection of Papers

Full list of publications on Google Scholar

**Ramoneda, P.**, Lee, M., Jeong, D., Valero-Mas, J.J., & Serra, X. *Can Audio Reveal Music Performance Difficulty? Insights from the Piano Syllabus Dataset.* IEEE TASLP (2025).

Alonso, P., **Ramoneda, P.**, Araz, R.O., Poltronieri, A., & Bogdanov, D. *OMAR-RQ: Open Music Audio Representation Model Trained with Multi-Feature Masked Token Prediction.* ACM MM, (2025).

**Ramoneda, P.**, Rocamora, M., & Akama, T. *Music Proofreading with RefinPaint: Where and How to Modify Compositions given Context.* In Proceedings of ISMIR, (2024).

**Ramoneda, P.**, Suzuki, M., Maezawa, A., & Serra, X. *Difficulty-Aware Score Generation for Piano Sight-Reading.* Under review (2025).

**Ramoneda, P.**, Jeong, D., Nakamura, E., Serra, X., & Miron, M. *Automatic Piano Fingering from Partially Annotated Scores using Autoregressive Neural Networks.* In Proceedings of ACM MM, (2022).

**Ramoneda, P.**, Valero-Mas, J.J., Jeong, D., & Serra, X. *Predicting performance difficulty from piano sheet music images.* In Proceedings of ISMIR, (2023).

**Ramoneda, P.**, Tamer, N.C., Eremenko, V., Miron, M., & Serra, X. *Score difficulty analysis for piano performance education.* In Proceedings of ICASSP, (2022).

## Languages

Spanish ●●●●●
English ●●●●○
Portuguese ●●○○○
Catalan ●●○○○

## Skills

Python | C/C++ | JS | Machine Learning | Deep Learning | DSP | Embedded Systems | Recording Techniques | Music analysis | Music Performance | Music Information Retrieval

## A usual work-journey