

## Personal Information

Name Esteban Gutiérrez  
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## Education

2024–present **PhD in Information and Communication Technologies**, *Universitat Pompeu Fabra*  
2023–2024 **Master in Sound and Music Computing**, *Universitat Pompeu Fabra*  
2018–2021 **Magister en Matemáticas (MSc equivalent)**, *Pontificia Universidad Católica de Chile*  
2012–2017 **Licenciatura en Matemáticas (BSc equivalent)**, *Pontificia Universidad Católica de Chile*  
2006–2012 **Penta UC (Academic Talents Program)**, *Pontificia Universidad Católica de Chile*

## Selected Publications

- **(2026)** Gutiérrez, E., Font, F., Serra, X. and Wyse, L. SCAPES: Semantically Conditioned Autoregressive Prior for Environmental Sounds. Proceedings of the 29th International Conference on Digital Audio Effects (DAFx). Cambridge, USA 2026.
- **(2025)** Gutiérrez, E., Font, F., Serra, X. and Wyse, L. A Statistics-Driven Differentiable Approach for Sound Texture Synthesis and Analysis. Proceedings of the 28th International Conference on Digital Audio Effects (DAFx). Boston, USA 2025.
- **(2025)** Gutiérrez, E., Cádiz, R., Sing-Long, C., Font, F. and Serra, X. Fractional Fourier Synthesis. Proceedings of the International Computer Music Conference 2025: Curiosity Play Innovation. Michigan Publishing Services, 2025.
- **(2024)** Gutiérrez, E., Haworth, C. and Cádiz, R. F. Generating Sonic Phantoms with Quadratic Difference Tone Spectrum Synthesis. *Computer Music Journal*, 2024.
- **(2024)** Cádiz, R. F. and Gutiérrez, E. Stochastic Resonance: Molding Sounds from Noise. Proceedings of the Sound and Music Computing (SMC) Conference 2024: Immersive. Porto, Portugal, 2024.
- **(2023)** Cádiz, R. F., Gutiérrez, E. and Haworth, C. Generating Quadratic Difference Tone Spectra for Auditory Distortion Synthesis. Proceedings of the International Computer Music Conference 2023: The Sound of Changes. Chinese University of Hong Kong, Shenzhen, 2023. **(Best Paper Award)**
- **(2021)** De Nittis, G. and Gutiérrez, E. Quantization of Edge Currents Along Magnetic Interfaces: A K-Theory Approach. *Acta Applicandae Mathematicae*, 175, 6, 2021.

## Experience

2024–2026 **Adjunct Professor**, *Universitat Pompeu Fabra*  
Teaching practical and laboratory sessions for Music Technology Laboratory (25400), Discrete Mathematics (26845), and Signals and Systems I (24293).

2023–present **Predoctoral Researcher**, *Universitat Pompeu Fabra, Engineering School*  
Conducting research in music technology and sound synthesis under Dr. Xavier Serra and Dr. Frederic Font. Co-author of papers accepted at DAFx 2025, ICMC 2025, and DAFx 2026.

2023–present **Scientific Researcher**, *Pontificia Universidad Católica de Chile, Engineering School*  
Collaborating on music technology research under Dr. Rodrigo Cadiz. Co-author of a paper accepted at ICMC 2023 (Chinese University of Hong Kong), awarded Best Paper.

2021–2023 **Mathematics Coordinator**, *Universidad de Santiago de Chile*  
Coordinated and led mathematics workshops and academic support activities within the PAIEP program, including Algebra II, Calculus II, Calculus III, and Ordinary Differential Equations.

2022–2023 **Adjunct Professor**, *Universidad de Santiago de Chile*  
Taught Calculus II (10142) and Calculus III (10146).

- 2021–2021 **Adjunct Professor**, *Universidad de Chile, Faculty of Medicine*  
Taught Mathematics I (CB10006).
- 2020–2021 **Adjunct Professor**, *Pontificia Universidad Católica de Chile*  
Taught Linear Algebra (MAT1203) and Ordinary Differential Equations (MAT1640).
- 2019–2020 **Scientific Researcher**, *Pontificia Universidad Católica de Chile, Faculty of Mathematics*  
Conducted research on topological currents and K-Theory under Dr. Giuseppe de Nittis. Published in *Acta Applicandae Mathematicae* (Springer).
- 2016–2021 **Academic Tutor**, *Pontificia Universidad Católica de Chile*  
Tutored students in Calculus, Linear Algebra, Probability, and Ordinary Differential Equations across multiple academic support and inclusion programs.
- 2015–2020 **Teaching Assistant**, *Pontificia Universidad Católica de Chile*  
Assisted undergraduate courses in Calculus, Algebra, Geometry, Functional Analysis, and Applied Stochastic Processes.

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## Software and Programming Languages

- **PD & Max:** Advanced level in sound synthesis and processing using PD and Max. Also, I'm proficient in building externals using the min development kit for Max through C++.
- **Ableton:** Advanced level of sound production in Live.
- **Python:** Advanced level of Python with proficiency in its use for machine learning applications
- **C++:** Intermediate level of C++ with proficiency in the use of the library Eigen.
- **LaTeX:** Advanced level in writing academic articles using  $\text{\LaTeX}$ .
- **Adobe:** Advanced level in edition of images and sounds using Photoshop and Audition respectively.