

ANDRES ORCO

Department of Music

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RESEARCH INTERESTS

Music cognition; auditory perception; motor learning; experimental and computational modeling of music perception systems, especially rhythm, meter, and improvisation; statistical analysis of jazz repertoire and improvisation; Bayesian inference applied to metric structure; data-driven approaches to musicological inquiry.

EDUCATION

Yale University 2024–Present

Ph.D. in Music (in progress)

Focus: Music cognition and computational modeling of music perception

University of Colorado Boulder May 2023

Doctor of Musical Arts (D.M.A.) in Jazz Performance and Pedagogy

Graduate Certificate in Music Theory

Dissertation: "In Two Places at Once: Ben Monder's Harmonic Complexity Over Jazz Standards"

New England Conservatory May 2020

Master of Music (M.M.) in Jazz Performance

Recipient of Dean's Scholarship

Berklee College of Music May 2014

Bachelor of Music (B.M.), Double Major in Guitar Performance and Music Business/Management

Summa Cum Laude

PUBLICATION

Orco, Andres. "Meter in Contemporary Jazz: A Practitioner-Based Approach." *Revue musicale OICRM*, vol. 12, no. 2, 2025, pp. 1–26.

CONFERENCE PRESENTATIONS

Orco, Andres. "Rhythmic Complexity in Jazz: Expert Practitioners' Views and the Scholarly Literature." AMS/SMT Annual Meeting, Jazz Interest Group, Denver, CO. November 2023.

Orco, Andres. "Rhythmic Complexity in Jazz: Expert Practitioners' Views and the Scholarly Literature." *Rhythm in Music Since 1900*, McGill University. September 2023.

Orco, Andres. "Polyphonic Jazz Guitar: Ben Monder's Solo Guitar Arrangement of the Jazz Standard 'Emily.'" UB International Guitar Research Conference, University of Buffalo. September 2023.

RESEARCH PROJECTS

Probabilistic Model of Metric Inference (Patrick Zimmerli's "Pendulum")

Bayesian generative model investigating the way listeners infer meter from metrically ambiguous music. Built a multimodal data pipeline integrating audio accent analysis (spectral flux via librosa) with symbolic onset data (MusicXML via music21). Implemented inference using importance resampling and particle filtering in Julia/Gen. The model successfully discriminates competing meter hypotheses (4/4, 5/4, composite meters) from a contemporary jazz composition. Recommended for publication by course faculty.

Tools: Julia, Gen, Python, librosa, music21, NumPy

Coltrane Improvisation Dataset

Constructed a structured dataset of 5,400+ annotated note events across 7 John Coltrane solos spanning 1959–1965. Designed a processing pipeline to extract 27 features per note (pitch, timing, harmony, articulation, melodic intervals) from hand-transcribed MusicXML scores. Includes chord imputation logic and phrase-level segmentation framework for computational analysis of improvisational patterns.

Tools: Python, music21, pandas, NumPy

DATA ANALYSIS & TECHNICAL EXPERIENCE

Research Finance and Compliance Specialist, Harvard University

Apr 2016–Aug 2020

- Developed relational database models and advanced dashboards for research administration metrics using Brio and Microsoft Excel, including YoY comparative analysis of proposals, awards, and sponsored expenditures
- Led data migration project transitioning legacy Brio models to Tableau, involving SQL file conversion and data manipulation in Tableau Prep
- Designed data visualization infographics in Tableau for annual reports, including geographic mapping of subrecipient monitoring and funding trends
- Participated in Indirect Cost Rate proposal; developed macro-enabled workbooks and connected databases that eliminated significant manual processing
- Produced ad hoc analytical reports for senior leadership on sponsor balances, faculty research portfolios, and service center operations

Research Administration Services Coordinator, Harvard University

Sep 2014–Mar 2016

- Supported research administration functional areas, developing working knowledge of compliance, best practices, and stakeholder service
- Directed the Responsible Conduct of Research course, developing materials and analyzing course efficiency data
- Managed the RAS website, improving content, design, and functionality

TECHNICAL SKILLS

Programming: Python (pandas, NumPy, librosa, music21, matplotlib), Julia (Gen probabilistic programming framework), SQL, SuperCollider

Data Analysis & Visualization: Tableau Desktop/Prep, Microsoft Excel, Brio/Hyperion

Music Technology: Dorico, MusicXML, Logic Pro, MAX/MSP, Guitar Pro, Finale

Languages: Spanish (native), English

TEACHING EXPERIENCE (SELECTED)

Lecturer, University of Colorado Boulder

Aug 2023–Aug 2024

Developed and delivered Advanced Jazz Composition and Analysis and Jazz Theory and Aural Foundations I. Topics included twelve-tone composition, serialism, speech melody, harmonic progressions, and transcription.

Graduate Teaching Instructor, University of Colorado Boulder

Aug 2022–May 2023

Designed and taught Jazz History for Non-Majors (180 students). Developed four-unit curriculum with lectures, listening analysis, discussion, and live performance demonstrations.

Teaching Assistant, University of Colorado Boulder

Aug 2020–Jul 2022

Taught Jazz Improvisation and Theory for Non-Majors, designed a fully asynchronous online Jazz History course, and directed Small Jazz Ensemble. Additional administrative duties included developing recruitment databases and enrollment analysis spreadsheets.

Guest Lecturer, Harvard University

May 2016

Presented two lectures and a performance on 1960s guitar styles to an undergraduate music history course in the Faculty of Arts and Sciences.

SELECTED PERFORMANCE EXPERIENCE

- Guitarist for Lion King (2019) in Concert Live to Film, National Repertory Orchestra (2023)
- Five Points Jazz Festival, Annie Booth Big Band (2023)
- NEC Panama Jazz Festival student group (2020)
- NEC Jazz Orchestra (2018–2020): performances with Miguel Zenón, Antonio Sánchez, Dave Holland, Ran Blake
- Guitarist for WGBH's holiday taping "A Night with Ben Folds and Friends" (2018)
- Berklee College of Music Guitar Night, Solo Artist (2013)

AWARDS & SCHOLARSHIPS

- Thompson Jazz Department Scholarship, University of Colorado Boulder, 2020–2023
- Community Performance & Partnerships Fellowship, New England Conservatory, 2018–2020
- Dean's Distinction Award, Harvard University, Faculty of Arts and Sciences, 2018
- Dean's Scholarship, New England Conservatory, 2018–2020
- Guitar Department Achievement Award, Berklee College of Music, 2014
- Summa Cum Laude, Berklee College of Music, 2014

REFERENCES

Available upon request.