

Carlos Eduardo Cancino-Chacón

PERSONAL DETAILS

Birth June 6, 1986
Citizenship Austrian, Mexican
Address Institute of Computational Perception
Johannes Kepler University Linz
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MAIN AREAS OF RESEARCH

- Computational models of expressive music performance
- Real-time human-computer interaction in music performance (automatic accompaniment systems, interfaces for musical expression)
- Cognitively-plausible computational models of music analysis and music cognition
- Music Information Retrieval
- Machine learning (deep learning, probabilistic models)

ACADEMIC QUALIFICATIONS

Doctoral degree in Computer Science 10/2014–12/2018

Johannes Kepler University of Linz, Austria

Supervisor: Gerhard Widmer

Co-supervisor: Maarten Grachten

Thesis: Computational Modeling of Expressive Music Performance Through Linear and Non-linear Basis Function Models

Master's degree in Electrical Engineering and Audio Engineering 10/2011–07/2014

Graz University of Technology/University of Music and Performing Arts Graz, Austria

Supervisor: Franz Pernkopf

Thesis: Tarkus Belief Propagation: On Message Passing Algorithms and Computational Commutative Algebra

Undergraduate degree in Physics 08/2005–03/2011

National Autonomous University of Mexico, Mexico City, Mexico

Supervisor: Marcos Ley Koo

Thesis: Análisis teórico experimental de transductores de ultrasonido tipo Langevin
(*Theoretical-experimental analysis of ultrasonic Langevin transducers*)

Undergraduate degree in Piano Performance 09/1999–02/2011

National Conservatory of Music, Mexico City, Mexico

Supervisor: Héctor Alfonso Rojas Ramírez

RESEARCH EXPERIENCE

Senior Researcher <i>Institute of Computational Perception</i> <i>Johannes Kepler University Linz, Austria</i>	10/2025-present
Assistant Professor <i>Institute of Computational Perception</i> <i>Johannes Kepler University Linz, Austria</i>	11/2020-9/2025
Guest Researcher <i>RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion</i> <i>University of Oslo, Norway</i> Project: MIRAGE	01/2020-10/2021
Postdoctoral Researcher <i>Austrian Research Institute for Artificial Intelligence, Vienna, Austria</i> <i>Intelligent Music Processing and Machine Learning Group</i> Project: Con Espressione Supervisor: Gerhard Widmer	12/2018-10/2020
Doctoral Researcher <i>Austrian Research Institute for Artificial Intelligence, Vienna, Austria</i> <i>Intelligent Music Processing and Machine Learning Group</i> Projects: <ul style="list-style-type: none">• Lrn2Cre8 (01/2014 – 09/2016) Supervisors: Maarten Grachten and Gerhard Widmer• Con Espressione (10/2016 – 12/2018) Supervisor: Gerhard Widmer	01/2014-12/2018

GRANTS

AURA: Augmenting musical interaction via Embodied Virtual Avatars	
Weave: Research Foundation–Flanders (FWO) and Austrian Science Fund (FWF) 2025-2029	
<i>Principal Investigator (FWO-leading agency) Pieter-Jan Maes (grant number G0A3R25N)</i>	
<i>Principal Investigator (FWF) Carlos Cancino-Chacón (grant number PIN 1347924)</i>	
<i>FWF share: €264,679.00 (total Weave project budget: €826,979.00)</i>	
Rach3: A Computational Approach to Study Piano Rehearsals	
Austrian Science Fund (FWF)	2024-2027
<i>Principal Investigator (grant number PAT 8820923)</i>	
<i>Total funding: €457,812.00</i>	

TEACHING AND SUPERVISION

External Lecturer <i>University of Music and Performing Arts Vienna, Austria</i> <ul style="list-style-type: none">• Musical Computing (PhD level)	03/2023-10/2023
Assistant Professor <i>Johannes Kepler University Linz, Austria</i>	10/2020-present

- Musical Informatics (undergraduate/master's level)
- Reinforcement Learning (undergraduate level)
- Machine Learning and Pattern Classification (exercise track; undergraduate/master's level)
- Seminars in Data Science and Artificial Intelligence (undergraduate and master's level)
- Artificial Intelligence (exercise track; undergraduate level)

Course Lecturer

01/2011-07/2011

National Conservatory of Music, Mexico City, Mexico

- Elementary Music Theory I
- Harmony (Levels I-III)

Supervision/Co-Supervision

Johannes Kepler University Linz, Austria

Current

- **Ivan Pilkov** (October 2024-present) PhD Co-supervisor (with Gerhard Widmer)
- **Suhit Chirithapudi** (November 2024-present) PhD Co-supervisor (with Gerhard Widmer)
- **Alexander Neuhauser** (Master's thesis, expected October 2025) Difficulty Estimation and Robotic Piano Performance via Reinforcement Learning
- **Huan Zhang** (June 2022-present) External PhD Mentor as part of the AIM Mentoring Programme at Queen Mary University of London (main supervisor: Simon Dixon).
- **Julian Bakan** (Bachelor's thesis, expected November 2025) A Systematic Comparison of Dynamic Time Warping and Hidden Markov Models for Symbolic Score-to-Performance alignment.

Finished

- **Kseniia Leonteva** (Bachelor's thesis, October 2025) Predicting the Electrical Demand of Aluminium Hot Rolling
- **Daryna Vorona** (Bachelor's thesis, September 2025) Convolutional Neural Networks for Difficulty Classification of Piano Sheet Music
- **Adam Štefunko** (February 2025-July 2025 Internship as part of PhD program). Symbolic Alignment for Basso Continuo Performances. Main PhD supervisor: Jan Hajič jr.
- **Maximilian Hofmann** (Bachelor's thesis, February 2025). Transformer models for Expressive Piano Performance Rendering
- **Ivan Pilkov** (Master's Thesis, September 2024). Automatic Pose Estimation for Kinematic Analysis of the Arm-Hand-Fingers Chain of Pianists.
- **Alexander Deutschbauer** (Bachelor's thesis, August 2024). TPDD: A Dataset for Automatic Difficulty Estimation of Solo Piano Pieces.
- **Uros Zivanovic** (Bachelor's thesis, September 2023). Transformers for Piano Playing Detection and Note Detection from Video.
- **Jasmin Roll** (Bachelor's thesis, September 2023). Evaluating Real-Time Audio-to-Audio Alignment using OLTW and HMM on Piano and Violin Music.
- **Simon Bauer** (Master's Project, July 2023). Computer-Generated Music for Traditionally Non-Musical Story Experiences.

- **CoPeWithUs Team** (March 2022- June 2022) Co-supervised (with Silvan Peter) a team of 4 master's students (Anna Hausberger, Christoph Pichler, Ivan Pilkov and Jakob Wögerbauer) who participated in the AI Song Contest 2022.

Austrian Research Institute for Artificial Intelligence, Vienna, Austria

- **Simon Bahadoran** (Summer Internship/Master's Thesis Summer 2020). Development of an encoder-decoder model for conditional prediction of expressive piano performance.
- **Martin Bonev** (2017-2019). Development of a polyphonic score follower for an expressive accompaniment system.
- **Federico Simonetta** (Summer Internship Summer 2018). Main melody line identification from symbolic scores using convolutional neural networks.

ACADEMIC ACTIVITIES

ACADEMIC COMMITTEES

- Member-at-large for the period 2024-2025, Board of the International Society for Music Information Retrieval.
- Member of the Editorial Board of the Transactions of the International Society for Music Information Retrieval.
- Co-organizer, LatAm BISH Bash Meetup group.
- Scientific Program Chair for the 1st Latin American Music Information Retrieval

REVIEWING

- **International Scientific Journals**
 - Journal of New Music Research, Neural Computing and Applications, Applied Sciences, Transactions of the International Society for Music Information Retrieval, Frontiers in Psychology, Music Perception, Music & Science.
- **International Conferences**
 - International Society for Music Information Retrieval Conference, International Joint Conference on Artificial Intelligence, Sound & Music Computing Conference, Biennial International Conference on Mathematics and Computation in Music, International Workshop on Deep Learning for Music, Multimedia Modeling Conference

INVITED SCIENTIFIC TALKS AND TUTORIALS

1. Cancino-Chacón, C. (December 2024) "An AI Dress Rehearsal: Exploring Music Performance and Interaction with Computational Models", Keynote Talk presented at the 1st Latin American Music Information Retrieval Workshop, Rio de Janeiro, Brazil
2. Cancino-Chacón, C. (December 2023) "Towards Expressive Artificial Musical (Co-)performers", invited talk at the 5th LatAm BISH Bash, online
3. Cancino-Chacón, C. (December 2023) "Towards Expressive Artificial Musical Co-performers: The ACCompanion Story", invited talk at the International Symposium on AI and Music Performance, Daejeon, South Korea
4. Cancino-Chacón, C. (June 2023) "Towards Understanding Emotion Communicated Through Performance of Orchestral Music: Preliminary Results", invited talk at the 2nd MIRAGE Symposium, RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, University of Oslo, Norway.

5. Cancino-Chacón, C., Peter, S., Karystinaios, E., Foscarin, F., (December 2022) “An Introduction to Symbolic Music Processing with Partitura”, tutorial session at the 23rd International Society for Music Information Retrieval Conference, Bengaluru, India
6. Cancino-Chacón, C. (September 2022) “Play it Again, Hall 9000! Towards Expressive Computational Music Performers” invited talk at the Max Planck Institute for Intelligent Systems, Tübingen, Germany
7. Cancino-Chacón, C. (March 2022) “Decoding Communicated Emotion in Expressive Music Performance (of the Rach 3!)”, invited talk at the MIRAGE Workshop, University of Oslo, Norway
8. O. Lartillot, E. Guldbrandsen, C. E. Cancino-Chacón (June 2021), “Dynamics analysis, and application to a comparative study of Bruckner performances” Invited Talk at the Mirage Symposium #1: Computational Musicology, RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, University of Oslo, Norway.
9. Cancino-Chacón C. (April 2020) “I’ll be Bach! Modeling Expressive Performance with Machine Learning”, invited talk at the Food & Paper Talk Series, RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion, University of Oslo, Norway.
10. Cancino-Chacón C. (March 2020) “Machine Listening of Orchestral Music”, invited talk at the Workshop on Musical Listening, University of Oslo, Norway.
11. Cancino-Chacón, C., Kosta, K. and Grachten, M. (November 2019) “Computational Models of Expressive Performance”, tutorial session at the 20th International Society for Music Information Retrieval Conference, Delft, The Netherlands.
12. Cancino-Chacón, C. (March 2019) “Modeling Expressive Music Performance with Non-linear Basis Function Models”, invited talk at the Deep Learning Seminar, University of Vienna, Austria.
13. Cancino-Chacón, C. (January 2019) “Computational Modeling of Expressive Music Performance with Linear and Non-linear Basis Function Models”, invited talk at the Austrian Research Institute for Artificial Intelligence, Vienna, Austria.
14. Cancino-Chacón, C. (November 2016) “¿Escuchan los androides música electrónica?”, invited talk at the Pláticas DeMentes talk series. Faculty of Psychology, National Autonomous University of Mexico.
15. Cancino-Chacón, C. (November 2016) “En busca del factor Mozart”, invited talk at the National Conservatory of Music, Mexico City, Mexico.

SCOLARSHIPS AND AWARDS

Award for Creative Achievement

06/2017

AccompaniX Competition, 2017 Turing Tests in the Creative Arts.

\$500 team award for development of an expressive computer accompaniment system.

Fundación INBA – CONACYT Scholarship

Mexican National Council for Science and Technology

10/2012-02/2014

PUBLIC OUTREACH AND DISSEMINATION

PUBLIC DEMONSTRATIONS

- *The Dress Rehearsal Recital Series*.
- *The Accompanion*, an AI-based Piano Accompaniment System. My team and I have presented the following demos of the ACCompanion:
 - (December 2023) Lecture Concert during the International Symposium on AI and Expressive Performance, KAIST, Daejeon, South Korea
<https://sites.google.com/view/isaimp2023/lecture-concert>
 - (October 2022) Demo at the MAINS Matinee at the Heidelberg Forum Foundation, Heidelberg, Germany
<https://www.imaginary.org/node/2417>
 - (July 2022) Demo during Gerhard Widmer's Keynote at IJCAI-ECAI 2022, Vienna, Austria
<https://youtu.be/HzrwBFPN618?t=3105>
 - (July 2022) Demo at the Music Togetherness Symposium
<https://mdw.ac.at/togetherness/mt-symposium/mts-22-programme/>
 - (November 2021) Demo at the Falling Walls Science Summit 2021, Berlin, Germany
<https://www.youtube.com/watch?v=KE6WhYxuWLk&t=799s>
 - Playlist of videos of the ACCompanion recorded in Vienna.
<https://www.youtube.com/playlist?list=PLPUWmNCGf1VNxPppf1MNFmZWed10hZeP0>
- *Con Espressione! Exhibit*, an interactive system designed for popular science exhibitions in collaboration with IMAGINARY gGmbH (<https://www.imaginary.org/program/con-espressione>). The exhibit has been presented at the following exhibits at the Heidelberg Forum Foundation in Heidelberg, Germany:
 - “La La Lab - The Mathematics of Music” (2019-2020)
<https://www.imaginary.org/exhibition/la-la-lab-the-mathematics-of-music>
 - “I am A. I. in Heidelberg” (2022)
<https://www.imaginary.org/event/i-am-ai-in-heidelberg>

INTERVIEWS AND PUBLIC PRESS

- Kang, M.-k. (2023). My piano teacher is an AI pianist who has performed with human performers. EDAILY [Published: Dec. 7th, 2023]. (In Korean) <https://n.news.naver.com/article/018/0005633332?type=journalists>
- Vižintin, A. (2023). Artificial Intelligence and Music. Radio Študent FM 89.3 [Broadcasted Oct. 8th, 2023]. <https://radiostudent.si/znanost/zr-intervju/umetna-inteligenca-i-n-glasba>
- Vincent, J. (2016). A night at the AI jazz club. The Verge [Published: Oct. 12th 2016]. <https://www.theverge.com/2016/10/12/13247686/ai-music-composition-jazz-club-london-deep-learning>

PUBLICATIONS

PEER REVIEWED PUBLICATIONS

1. Chiruthapudi, S., Štefunko, A., Hajić jr., J., and Cancino-Chacón, C. E. (in press). Challenges in Basso Continuo Performance-to-Score Alignment. In *Proceedings of the 17th International Symposium on Computer Music Multidisciplinary Research (CMMR 2025)*, London, UK

2. Morsi, A., Chiruthapudi, S., Peter, S., Pilkov, I., Bishop, L., Maezawa, A., Serra, X., and Cancino-Chacón, C. (2025). Enabling Empirical Analysis of Piano Performance Rehearsal with the Rach3 MIDI Dataset. In *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR 2025)*, Daejeon, South Korea
3. Park, J., Cancino-Chacón, C., Chiruthapudi, S., and Nam, J. (2025). Matchmaker: An Open-Source Library for Real-Time Piano Score Following and Systematic Evaluation. In *Proceedings of the 26th International Society for Music Information Retrieval Conference (ISMIR 2025)*
4. Štefunko, A., Chiruthapudi, S., Hajič jr., J., and Cancino-Chacón, C. E. (2025). Basso Continuo Goes Digital: Collecting and Aligning a Symbolic Dataset of Continuo Performance. In *Proceedings of the 6th Conference on AI Music Creativity (AIMC 2025)*, Brussels, Belgium
5. Lartillot, O., Swarbrick, D., Upham, F., and Cancino-Chacón, C. E. (2025). Video Visualization of a String Quartet Performance of a Bach Fugue: Design and Subjective Evaluation. *Music & Science*, 8:20592043251352299
6. Høffding, S., Bergstrøm, R. J. F., Bishop, L., Lucas, P., Burnim, K., Cancino-Chacón, C., Clim, A., Good, M., Hansen, N. C., Karlsen, E. S., Kvale, L. H., Laeng, B., Lartillot, O., Lippert, E., Martin, R., Nielsen, N., Omprakash, R., Paulsrud, T. S., Rosas, F., Swarbrick, D., Sørbø, S., Upham, F., Vrasdonk, A., Vuoskoski, J., Wallot, S., Yi, W., Danielsen, A., and Jensenius, A. R. (2025). Introducing the MusicLab Copenhagen Dataset. *Music & Science*, 8:20592043241303288
7. Zivanovic, U., Pilkov, I., and Cancino-Chacón, C. E. (2025). Pay Attention to the Keys: Visual Piano Transcription Using Transformers. In *Proceedings of the 34th International Joint Conference on Artificial Intelligence*, Montreal, Canada
8. Hu, P., Marták, L. S., Cancino-Chacón, C., and Widmer, G. (2024). Towards musically informed evaluation of piano transcription models. In *Proceedings of the 25th International Society for Music Information Retrieval Conference (ISMIR 2024)*, San Francisco, CA, USA
9. Zhang, H., Chowdhury, S., Cancino-Chacón, C. E., Liang, J., Dixon, S., and Widmer, G. (2024). Dexter: Learning and controlling performance expression with diffusion models. *Applied Sciences*, 14(15)
10. Cancino-Chacón, C. and Pilkov, I. (2024). The Rach3 Dataset: Towards Data-Driven Analysis of Piano Performance Rehearsal. In *Proceedings of the 30th International Conference on Multimedia Modeling MMM24*, Amsterdam, Netherlands
11. Peter, S. D., Chowdhury, S., Cancino-Chacón, C. E., and Widmer, G. (2023c). Are we describing the same sound? An analysis of word embedding spaces of expressive piano performance. In *FIRE '23: Proceedings of the 15th Annual Meeting of the Forum for Information Retrieval Evaluation*, Panjim, India
12. Peter, S. D., Cancino-Chacón, C. E., Karystinaios, E., and Widmer, G. (2023b). Sounding out reconstruction error-based evaluation of generative models of expressive performance. In *Proceedings of the 10th International Conference on Digital Libraries for Musicology, DLfM '23*, pages 58–66, New York, NY, USA. Association for Computing Machinery
13. Zhang, H., Karystinaios, E., Dixon, S., Widmer, G., and Cancino-Chacón, C. (2023). Symbolic Music Representations for Classification Tasks: A Systematic Evaluation. In *Proceedings of the 24th International Society for Music Information Retrieval Conference (ISMIR 2023)*, Milan, Italy
14. Peter, S. D., Cancino-Chacón, C. E., Foscarin, F., McLeod, A. P., Henkel, F., Karystinaios, E., and Widmer, G. (2023a). Automatic Note-Level Score-to-Performance Alignments in the ASAP Dataset. *Transactions of the International Society for Music Information Retrieval*

15. Cancino-Chacón, C., Peter, S., Hu, P., Karystinaios, E., Henkel, F., Foscari, F., and Widmer, G. (2023). The ACCompanion: Combining Reactivity, Robustness, and Musical Expressivity in an Automatic Piano Accompanist. In *Proceedings of the Proceedings of the 32nd International Joint Conference on Artificial Intelligence (IJCAI-23)*, Macao, S. A. R
16. Cancino-Chacón, C. E. (2023). Commentary on A Computational Approach to the Detection and Prediction of (Ir)Regularity in Children’s Folk Songs. *Empirical Musicology Review*, 6(2)
17. Cancino-Chacón, C., Peter, S. D., Karystinaios, E., Foscari, F., Grachten, M., and Widmer, G. (2022b). Partitura: A Python Package for Symbolic Music Processing. In *In Proceedings of the Music Encoding Conference (MEC2022)*, Halifax, Canada
18. Foscari, F., Karystinaios, E., Peter, S. D., Cancino-Chacón, C., Grachten, M., and Widmer, G. (2022). The match file format: Encoding Alignments between Scores and Performances. In *In Proceedings of the Music Encoding Conference (MEC2022)*, Halifax, Canada
19. Bishop, L., Cancino-Chacón, C., and Goebel, W. (2021). Beyond synchronization: How and why do ensemble performers communicate. In Timmers, R., Bailes, F., and Daffern, H., editors, *Together in Music: Participation, Co-Ordination, and Creativity in Ensembles*. Oxford University Press
20. Cancino-Chacón, C., Peter, S., Chowdhury, S., Aljanaki, A., and Widmer, G. (2020). On the Characterization of Expressive Performance in Classical Music: First Results of the *Con Espressione* Game. In *Proceedings of the 21th International Society for Music Information Retrieval Conference (ISMIR 2020)*, Montreal, Canada
21. Lartillot, O., Cancino-Chacón, C., and Brazier, C. (2020). Real-Time Visualization of Fugue Played by a String Quartet. In *Proceedings of the 17th Sound and Music Computing Conference (SMC2020)*, Torino, Italy
22. Bishop, L., Cancino-Chacón, C., and Goebel, W. (2019b). Moving to communicate, moving to interact: Patterns of body motion in musical duo performance. *Music Perception*, 37(1):1–25
23. Bishop, L., Cancino-Chacón, C., and Goebel, W. (2019a). Eye gaze as a means of giving and seeking information during musical interaction. *Consciousness & Cognition*, 68:73–96
24. Simonetta, F., Cancino-Chacón, C., Ntalampiras, S., and Widmer, G. (2019). A Convolutional Approach to Melody Line Identification in Symbolic Scores. In *Proceedings of the 20th International Society for Music Information Retrieval Conference (ISMIR 2019)*, Delft, The Netherlands
25. Cancino-Chacón, C., Grachten, M., Goebel, W., and Widmer, G. (2018). Computational Models of Expressive Music Performance: A Comprehensive and Critical Review. *Frontiers in Digital Humanities*, 5:25
26. Velarde, G., Cancino-Chacón, C., Meredith, D., Weyde, T., and Grachten, M. (2018). Convolution-based classification of audio and symbolic representations of music. *Journal of New Music Research*, 47(3):191–205. doi: 10.1080/09298215.2018.1458885
27. Cancino-Chacón, C. E., Gadermaier, T., Widmer, G., and Grachten, M. (2017d). An Evaluation of Linear and Non-linear Models of Expressive Dynamics in Classical Piano and Symphonic Music. *Machine Learning*, 106(6):887–909
28. Grachten, M., Cancino-Chacón, C. E., Gadermaier, T., and Widmer, G. (2017). Towards computer-assisted understanding of dynamics in symphonic music. *IEEE Multimedia*, 24(1):36–46
29. Cancino-Chacón, C., Grachten, M., Sears, D. R. W., and Widmer, G. (2017c). What Were You Expecting? Using Expectancy Features to Predict Expressive Performances of Classical Piano Music. In *Proceedings of the 10th International Workshop on Machine Learning and Music (MML 2017)*, Barcelona, Spain

30. Cancino-Chacón, C., Grachten, M., and Agres, K. (2017b). From Bach to The Beatles: The Simulation of Human Tonal Expectation Using Ecologically-Trained Predictive Models. In *Proceedings of the 18th International Society for Music Information Retrieval Conference (ISMIR 2017)*, Suzhou, China
31. Grachten, M. and Cancino-Chacón, C. E. (2017). Temporal dependencies in the expressive timing of classical piano performances. In Lessafre, M., Maes, P.-J., and Leman, M., editors, *The Routledge Companion to Embodied Music Interaction*, pages 360–369. Routledge
32. Velarde, Gissel and Weyde, Tillman and Cancino Chacón, Carlos and Meredith, David and Grachten, Maarten (2016). Composer Recognition Based On 2D-Filtered Piano Rolls. In *Proceedings of the 17th International Society for Music Information Retrieval Conference (ISMIR 2016)*, pages 116–121, New York, NY, USA
33. Gadermaier, T., Grachten, M., and Cancino-Chacón, C. E. (2016). Basis-Function Modeling of Loudness Variations in Ensemble Performance. In *Proceedings of the 2nd International Conference on New Music Concepts (ICNMC 2016)*, Treviso, Italy
34. Cancino Chacón, C. E. and Grachten, M. (2015). An Evaluation of Score Descriptors Combined with Non-linear Models of Expressive Dynamics in Music. In *Proceedings of the 18th International Conference on Discovery Science (DS 2015)*, pages 48–62, Banff, AB, Canada
35. Agres, K., Cancino, C., Grachten, M., and Lattner, S. (2015). Harmonics co-occurrences bootstrap pitch and tonality perception in music: Evidence from a statistical unsupervised learning model. In *Proceedings of the Annual Meeting of the Cognitive Science Society (CogSci 2015)*, Pasadena, CA, USA
36. Lattner, S., Grachten, M., Agres, K., and Cancino Chacón, C. E. (2015b). Probabilistic Segmentation of Musical Sequences using Restricted Boltzmann Machines. In *Fifth International Conference on Mathematics and Computation in Music (MCM 2015)*, London, UK
37. Lattner, S., Cancino Chacón, C. E., and Grachten, M. (2015a). Pseudo-Supervised Training Improves Unsupervised Melody Segmentation. In *In Proceedings of the Twenty-Fourth International Joint Conference on Artificial Intelligence (IJCAI 2015)*, pages 2459–2465, Buenos Aires, Argentina
38. Cancino Chacón, C. E. and Mowlae, P. (2014). Least Squares Phase Estimation of Mixed Signals. In *15th Annual Conference of the International Speech Communication Association (INTERSPEECH 2014)*, Singapore
39. Cancino Chacón, C., Lattner, S., and Grachten, M. (2014a). Developing Tonal Perception Through Unsupervised Learning. In *Proceedings of the 15th International Society for Music Information Retrieval Conference (ISMIR 2014)*, pages 195–200, Taipei, Taiwan
40. Grachten, M., Cancino Chacón, C. E., and Widmer, G. (2014). Analysis and Prediction of Expressive Dynamics Using Bayesian Linear Models. In *Proceedings of the 1st International Workshop on Computer and Robotic Systems for Automatic Music Performance (SAMP 14)*, pages 545–552, Venice, Italy
41. Tschitschek, S., Cancino Chacón, C. E., and Pernkopf, F. (2013). Bounds for Bayesian network classifiers with reduced precision parameters. In *Proceedings of the 2013 International Conference on Acoustics, Speech and Signal Processing (ICASSP 2013)*, pages 3357–3361, Vancouver, Canada. IEEE

EXTENDED ABSTRACTS

1. Cancino-Chacon, C., Pilkov, I., and Bishop, L. (in press). Hanon Hands: Examining timing variability in pianists’ hand and finger motion at fast and slow tempi. In *Extended Abstracts of the International Symposium on Performance Science (ISPS 2025)*, Shanghai, China

2. Hu, P., Peter, S. D., Cancino-Chacón, C., and Widmer, G. (2025). Exploring Musical Time at the Phrase, Metre and Motif Level. In *Abstracts of the 20th Rhythm Perception & Production Workshop (RPPW20)*, Jyväskylä, Finland
3. Park, J., Cancino-Chacón, C., Kwon, T., and Nam, J. (2024). Matchmaker: A Python Library for Real-Time Music Alignment. In *Extended Abstracts for the Late-Breaking Demo Session of the 25th Int. Society for Music Information Retrieval Conference*, San Francisco, USA
4. Cancino-Chacón, C., Peter, S., and Widmer, G. (2022a). Can We Achieve Togetherness with an Artificial Partner? Insights and Challenges from Developing an Automatic Accompaniment System. In *Abstracts of the Musical Togetherness Symposium (MTS)*, Vienna, Austria
5. Cancino-Chacón, C., Peter, S., Karystinaios, E., and Widmer, G. (2021b). Towards Quantifying Differences in Expressive Piano Performances: Are Euclidean-like Distance Measures Enough? In *In Proceedings of the Rhythm and Perception Workshop (RPPW2021)*, Oslo, Norway
6. Cancino-Chacón, C., Peter, S., Chowdhury, S., Aljanaki, A., and Widmer, G. (2021a). Sorting Musical Expression: Characterization of Descriptions of Expressive Piano Performances. In *In Proceedings of the 16th International Conference on Music Perception and Cognition (ICMPC16-ESCOM11)*, Sheffield, UK
7. Cancino-Chacón, C. E., Balke, S., Henkel, F., Stussak, C., and Widmer, G. (2019). The *Con Espressione!* Exhibit: Exploring Human–Machine Collaboration in Expressive Performance. In *Late Breaking/ Demo, 20th International Society for Music Information Retrieval Conference (ISMIR 2019)*, Delft, The Netherlands
8. Grachten, M., Cancino-Chacón, C., and Gadermaier, T. (2019). partitura: A Python Package for Handling Symbolic Musical Data. In *Late Breaking/ Demo, 20th International Society for Music Information Retrieval Conference (ISMIR 2019)*, Delft, The Netherlands
9. Weigl, D., Cancino-Chacón, C., Bonev, M., and Goebel, W. (2019). Linking and Visualising Performance Data and Semantic Music Encodings in Real-Time. In *Late Breaking/ Demo, 20th International Society for Music Information Retrieval Conference (ISMIR 2019)*, Delft, The Netherlands
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