

Christoph Finkensiep

Digital and Cognitive Musicology Lab (DCML)
École Polytechnique Fédérale de Lausanne
INN 115, Station 14
CH-1015, Lausanne
Switzerland

✉ chfin@chfin.de
✉ christoph.finkensiep@epfl.ch
🆔 orcid.org/0000-0002-7002-6586
🐙 github.com/chfin
📄 Christoph Finkensiep

Education

- since 2017* **PhD**
Digital and Cognitive Musicology Lab (DCML)
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE, Switzerland
- 2014-2017* **M. Sc.** in Cognitive Science
UNIVERSITY OF OSNABRÜCK, Germany
- 2010-2014* **B. Sc.** in Computer Science
UNIVERSITY OF PADERBORN, Germany
- Fall 2012* Exchange Semester
UNIVERSITY OF HELSINKI, Finland
- 2010* **Abitur**
GYMNASIUM HORN-BAD MEINBERG, Germany

Theses

- 2022* “Studies in Free Polyphony”
PhD Thesis
Supervisor: Martin Rohrmeier (EPFL)
- 2017* “A Formal Model of Voice Leading”
Master Thesis
Supervisors: Kai-Uwe Kühnberger (University of Osnabrück), Martin Rohrmeier (TU Dresden)
- 2014* “Fast and Flexible Automatic Composition of Semantic Web Services”
Bachelor Thesis
Supervisor: Hans Kleine Büning (University of Paderborn)

Employment

- since 2017* ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Doctoral Assistant
Digital and Cognitive Musicology Lab

2017 TECHNICAL UNIVERSITY DRESDEN
Student Assistant
Dresden Music Cognition Lab

2015-2017 PROTESTANT CHURCH OF LADBERGEN
Director of Brass Ensemble

2013-2014 UNIVERSITY OF PADERBORN
Teaching Assistant *Introduction to Programming for Engineers*

2011-12 UNIVERSITY OF PADERBORN
Student Assistant
Decision Support & Operations Research Lab

Publications

Articles, Conference Papers, and Book Chapters

- forthcoming* **C. Finkensiep**, P. Ericson, S. Klassmann, and M. Rohrmeier (in preparation). “Chord Types and Ornamentation – A Bayesian Model of Extended Chord Profiles”. In: *Open Research Europe*
- C. Finkensiep**, M. Neuwirth, and M. Rohrmeier (submitted). “Music Theory and Model-Driven Corpus Research”. In: *Oxford Handbook of Corpus Studies in Music*. Oxford: Oxford University Press
- G. Cecchetti, S. A. Herff, **C. Finkensiep**, D. Harasim, and M. Rohrmeier (in press). “Hearing Functional Harmony in Jazz: A Perceptual Study on Music-Theoretical Accounts of Extended Tonality.” In: *Musicae Scientiae*
- 2021 **C. Finkensiep** and M. Rohrmeier (2021). “Modeling and Inferring Proto-Voice Structure in Free Polyphony”. In: *Proceedings of the 22nd International Society for Music Information Retrieval Conference*. ISMIR. Online, pp. 189–196.  [10.5281/zenodo.5624431](https://doi.org/10.5281/zenodo.5624431)
- S. A. Herff, D. Harasim, G. Cecchetti, **C. Finkensiep**, and M. Rohrmeier (2021). “Hierarchical Syntactic Structure Predicts Listeners’ Sequence Completion in Music”. In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. CogSci. Vol. 43. Online.  <https://escholarship.org/uc/item/9w44g4x1>
- D. Harasim, **C. Finkensiep**, L. Bigo, M. Giraud, F. Levé, D. R. W. Sears, D. Shanahan, and M. Rohrmeier (2021). “Music Cognition: The Complexity of Musical Structure”. In: *Proceedings of the Annual Meeting of the Cognitive Science Society*. CogSci. Vol. 43. Online.  <https://escholarship.org/uc/item/9qh5m4dc>
- 2020 **C. Finkensiep**, K. Déguernel, M. Neuwirth, and M. Rohrmeier (2020). “Voice-Leading Schema

Recognition Using Rhythm and Pitch Features”. In: *Proceedings of the 21st International Society for Music Information Retrieval Conference*. ISMIR. Montreal, Canada (online), pp. 520–526. doi 10.5281/zenodo.4245482

D. Harasim, **C. Finkensiep**, P. Ericson, T. J. O'Donnell, and M. Rohrmeier (2020). “The Jazz Harmony Treebank”. In: *Proceedings of the 21st International Society for Music Information Retrieval Conference*. ISMIR. Montreal, Canada (online), pp. 207–215. doi 10.5281/zenodo.4245406

G. Cecchetti, S. A. Herff, **C. Finkensiep**, and M. Rohrmeier (2020). “The Experience of Musical Structure as Computation : What Can We Learn?” In: *Rivista di analisi e teoria musicale* XXVI, 2, 2020, pp. 91–127. doi 10.53152/1032. https://www.torrossa.com/en/resources/an/4943892

2019 **C. Finkensiep**, R. Widdess, and M. Rohrmeier (2019). “Modelling the Syntax of North Indian Melodies with a Generalized Graph Grammar”. In: *Proceedings of the 20th International Society for Music Information Retrieval Conference*. ISMIR. Delft, The Netherlands, pp. 462–469. doi 10.5281/zenodo.3527844

2018 **C. Finkensiep**, M. Neuwirth, and M. Rohrmeier (2018). “Generalized Skipgrams for Pattern Discovery in Polyphonic Streams”. In: *Proceedings of the 19th International Society for Music Information Retrieval Conference*. ISMIR. Paris, France, pp. 547–553. doi 10.5281/zenodo.1492473. http://ismir2018.ircam.fr/doc/pdfs/202_Paper.pdf

Talks and Presentations

(☞ = invited talk, ☞ = conference talk, ☐ = poster)

2021 ☐ “Modeling and Inferring Proto-Voice Structure in Free Polyphony” November 8-12, 2021
ISMIR 2021, online

☞ “Modeling Hierarchical Structure at the Note Level” July 29, 2021
CogSci 2021, online

In symposium: “Music Cognition: The Complexity of Musical Structure”

2020 ☐ “Voice-Leading Schema Recognition” October 12-16, 2020
ISMIR 2020, online

2019 ☐ “A Graph Grammar for North Indian Melodies” November 6, 2019
ISMIR 2019
Delft, The Netherlands

☞ “A Graph Representation of Hierarchical Voice-Leading” July 2, 2019
Workshop: “Corpus Research as a Means of Unlocking Musical Grammar”
UNIVERSITY OF TEL-AVIV & BAR-ILAN UNIVERSITY
Tel Aviv, Israel

☐ “Representing Hierarchical Voice-Leading Structure with Graph Transformations”
SEMPRE Graduate Conference 2019 March 25, 2019
Cambridge, UK

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| | <p>🔗 “From Bach to the Beatles” with Markus Neuwirth & Martin Rohrmeier <i>“Mixed Methods” in the Humanities</i> mid-term meeting, Volkswagen Foundation Hildesheim, Germany</p> | February 21, 2019 |
| | <p>🔗 “Schema Matching mit Skipgrams” HOCHSCHULE FÜR MUSIK FREIBURG Freiburg, Germany</p> | February 20, 2019 |
| 2018 | <p>🔗 📄 “Generalized Skipgrams” ISMIR 2018 Paris, France</p> | September 26, 2018 |
| | <p>🔗 “Schema Matching with Skipgrams” DCML Workshop 2018 ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE Lausanne, Switzerland</p> | September 19, 2018 |
| | <p>🔗 “Digitale Musikforschung: Projekte und Fallstudien” with Markus Neuwirth UNIVERSITY OF MUSIC AND PERFORMING ARTS MANNHEIM Mannheim, Germany</p> | June 14-15, 2018 |
| 2017 | <p>🔗 “Formalizing Four-Part Voice Leading Rules” TECHNICAL UNIVERSITY DRESDEN Dresden, Germany</p> | January 17, 2017 |

Open Source Code

Implementation of the Protovoice Model (Haskell)

🔗 [DCMLab/protovoices-haskell](#)

Annotation Tool for Protovoice Analyses (PureScript)

🔗 [DCMLab/protovoice-annotation-tool](#)

Annotation Tool for Voice-Leading Schemata (ClojureScript)

🔗 [DCMLab/schema_annotation_app](#)

Annotation Tool for Tree Analyses (ClojureScript)

🔗 [DCMLab/tree-annotation-code](#)

Matcher for Voice-Leading Schemata (Julia)

🔗 [DCMLab/schemata_code/tree/ismir2020](#)




Libraries for Musical Pitches and Intervals

- musicology-pitch (Haskell)

🔗 [DCMLab/haskell-musicology/tree/master/musicology-pitch](#)

- pitchtypes (Python)

🔗 [DCMLab/pitchtypes](#)

- `Pitches.jl` (Julia)
 [DCMLab/Pitches.jl](#)
- `purescript-pitches` (PureScript)
 [DCMLab/purescript-pitches](#)
- `pitches` (Rust)
 [DCMLab/rust-pitches](#)

Teaching

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| <i>2018-2021</i> | Supervision of Student Projects |
| <i>Spring</i> | Teaching Assistant: “Digital Musicology” |
| <i>2019 & 2020</i> | Master Course, EPFL |
| <i>Spring</i> | Co-Lecturer: “Musical Improvisation, Invention and Creativity” |
| <i>2019 & 2020</i> | Bachelor Course, EPFL |
| <i>2019</i> | Teaching Assistant: “Music, Musical Structure, Artificial Neural Networks, and the Mind” Summer School, Magliaso, Switzerland |
| <i>Winter 2013/14</i> | Teaching Assistant: “Introduction to Programming for Engineers” Bachelor Course, UNIVERSITY OF PADERBORN |

Reviewer Activity

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| <i>Conferences</i> | ISMIR |
| <i>Journals</i> | Music Theory and Analysis (MTA) |

Scholarships and Awards

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| <i>2021</i> | Best Reviewer Award, <i>ISMIR 2021</i> |
| <i>2010-2017</i> | Student Scholarship, <i>German Academic Scholarship Foundation</i> |
| <i>2012</i> | ERASMUS Scholarship (exchange semester), <i>European Union</i> |
| <i>2011</i> | 3rd Place for Task 2, <i>Data Mining Cup</i> |

Memberships and Responsibilities

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| <i>2019-2021</i> | Student Representative <i>Doctoral School of Digital Humanities</i> , EPFL |
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| <i>2013-2014</i> | Student Representative <i>German Academic Scholarship Foundation, UNIVERSITY OF PADERBORN</i> |
| <i>since 2021</i> | Member of the <i>Cognitive Science Society</i> |
| <i>since 2019</i> | Member of the <i>UNIL-EPFL dhCenter</i> |
| <i>since 2018</i> | Member of the <i>International Society for Music Information Retrieval (ISMIR)</i> |

Skills

Languages

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| <i>German</i> | native speaker |
| <i>English</i> | fluent |
| <i>French</i> | basic skills |

Computing

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| <i>Programming Languages</i> | Haskell, Python, Julia, PureScript, Clojure/ClojureScript, Common Lisp, JavaScript, Rust, Java, C/C++, PHP |
| <i>Frameworks / Libraries</i> | numpy, pandas, PyTorch, halogen, monad transformers, probabilistic programming (pyro, Haskell) |
| <i>Markup Languages</i> | LaTeX, HTML/CSS, LilyPond |

Music

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| <i>since 1998</i> | Trombone 10 years of lessons, including university level Experience in various jazz and classical ensembles, solo literature <ul style="list-style-type: none"> • Minor during Bachelor (2011-2014) • Musikakademie, German Academic Scholarship Foundation (bass trombone, 2012-14, 2016-17) • Landesjugendposaunenchor Westfalen Lippe (lead trombone, 2013-2019) • Big Band Hochschule Osnabrück, Jazz Department (bass trombone, 2014-2015) |
| <i>since 2001</i> | Piano |
| <i>since 2007</i> | Conducting (brass ensemble) |
| <i>since 2013</i> | Choir Singing |