

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

- 2017-2022 **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 “The Structure of 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)

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| 2022 | ☞ “Protovoices – A Model of Tonal Structure at the Surface”
in symposium: “Abstraction, Theory Building, Models”
☞ “Models in Practice”
workshop, with Johannes Hentschel
<i>GMTH Kongress 2022</i>
Salzburg, Austria | Sep. 30, 2022 |
| 2021 | ☞ ☐ “Modeling and Inferring Proto-Voice Structure in Free Polyphony”
<i>ISMIR 2021</i> , online

☞ “Modeling Hierarchical Structure at the Note Level”
in symposium: “Music Cognition: The Complexity of Musical Structure”
<i>CogSci 2021</i> , online | Nov. 8-12, 2021

July 29, 2021 |
| 2020 | ☞ ☐ “Voice-Leading Schema Recognition”
<i>ISMIR 2020</i> , online | Oct. 12-16, 2020 |
| 2019 | ☞ ☐ “A Graph Grammar for North Indian Melodies”
<i>ISMIR 2019</i>
Delft, The Netherlands | Nov. 6, 2019 |

-  "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" Mar. 25, 2019
SEMPRE Graduate Conference 2019
 Cambridge, UK
-  "From Bach to the Beatles" Feb. 21, 2019
 with Markus Neuwirth & Martin Rohrmeier
"Mixed Methods" in the Humanities mid-term meeting, Volkswagen Foundation
 Hildesheim, Germany
-  "Schema Matching mit Skipgrams" Feb. 20, 2019
 HOCHSCHULE FÜR MUSIK FREIBURG
 Freiburg, Germany
- 2018  "Generalized Skipgrams" Sep. 26, 2018
ISMIR 2018
 Paris, France
-  "Schema Matching with Skipgrams" Sep. 19, 2018
DCML Workshop 2018
 ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE
 Lausanne, Switzerland
-  "Digitale Musikforschung: Projekte und Fallstudien" June 14-15, 2018
 with Markus Neuwirth
 UNIVERSITY OF MUSIC AND PERFORMING ARTS MANNHEIM
 Mannheim, Germany
- 2017  "Formalizing Four-Part Voice Leading Rules" Jan. 17, 2017
 TECHNICAL UNIVERSITY DRESDEN
 Dresden, Germany

Open Source Code

Implementation of the Protovoice Model (Haskell)

 [DCMLab/protovoices-haskell](https://github.com/DCMLab/protovoices-haskell)


Annotation Tool for Protovoice Analyses (PureScript)

 [DCMLab/protovoice-annotation-tool](https://github.com/DCMLab/protovoice-annotation-tool)

Annotation Tool for Voice-Leading Schemata (ClojureScript)

 [DCMLab/schema_annotation_app](https://github.com/DCMLab/schema_annotation_app)

Annotation Tool for Tree Analyses (ClojureScript)

 [DCMLab/tree-annotation-code](https://github.com/DCMLab/tree-annotation-code)

Matcher for Voice-Leading Schemata (Julia)

🔗 [DCMLab/schemata_code/tree/ismir2020](https://github.com/DCMLab/schemata_code/tree/ismir2020)

Libraries for Musical Pitches and Intervals

- `musicology-pitch` (Haskell)
🔗 [DCMLab/haskell-musicology/tree/master/musicology-pitch](https://github.com/DCMLab/haskell-musicology/tree/master/musicology-pitch)
- `pitchtypes` (Python)
🔗 [DCMLab/pitchtypes](https://github.com/DCMLab/pitchtypes)
- `Pitches.jl` (Julia)
🔗 [DCMLab/Pitches.jl](https://github.com/DCMLab/Pitches.jl)
- `purescript-pitches` (PureScript)
🔗 [DCMLab/purescript-pitches](https://github.com/DCMLab/purescript-pitches)
- `pitches` (Rust)
🔗 [DCMLab/rust-pitches](https://github.com/DCMLab/rust-pitches)

Teaching

<i>2018-2022</i>	Supervision of Student Projects
<i>Spring 2019 & 2020</i>	Teaching Assistant: “Digital Musicology” Master Course, EPFL
<i>Spring 2019 & 2020</i>	Co-Lecturer: “Musical Improvisation, Invention and Creativity” 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

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

Scholarships and Awards

<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>

2011 3rd Place for Task 2, *Data Mining Cup*

Memberships and Responsibilities

2019-2021 Student Representative
Doctoral School of Digital Humanities, EPFL

2013-2014 Student Represtenative
German Academic Scholarship Foundation, UNIVERSITY OF PADERBORN

since 2021 Member of the *Cognitive Science Society*

since 2019 Member of the *UNIL-EPFL dhCenter*

since 2018 Member of the *International Society for Music Information Retrieval (ISMIR)*

Skills

Languages

German native speaker

English fluent

French basic skills

Computing

Programming Languages Haskell, Python, Julia, PureScript, Clojure/ClojureScript, Common Lisp, JavaScript, Rust, Java, C/C++, PHP

Frameworks / Libraries numpy, pandas, PyTorch, halogen, monad transformers, probabilistic programming (pyro, Haskell)

Markup Languages \LaTeX , HTML/CSS, LilyPond

Music

since 1998 Trombone

10 years of lessons, including university level

Experience in various jazz and classical ensembles, solo literature

- 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)

since 2001 Piano

since 2007 Conducting (brass ensemble)

since 2013 Choir Singing