

Brian McFee

Associate Professor of Music Technology and Data Science

Music and Performing Arts Professions
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Research interests

Music information retrieval, machine learning, audio signal processing

Education

UNIVERSITY OF CALIFORNIA, SAN DIEGO

La Jolla, CA

Ph.D. in Computer Science, 2012.

Dissertation: *More like this: Machine learning approaches to music similarity*

Advisor: Gert Lanckriet.

M.S. in Computer Science, 2008.

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Santa Cruz, CA

B.S. Computer Science with Highest Honors, 2003.

COLLEGE OF MARIN

Kentfield, CA

A.A. Mathematics, 2001.

Academic employment

NEW YORK UNIVERSITY

New York, NY

Associate professor, 2025–Present.

Assistant professor, 2018–2025.

Moore-Sloan data science fellow, 2014–2018.

COLUMBIA UNIVERSITY

New York, NY

Postdoctoral research scholar, 2012–2014.

Non-academic employment

SOCIAL SOURCE FOUNDATION

San Francisco, CA

Software engineer, 2005.

GROUNDSPRING.ORG

San Francisco, CA

Software engineer, 2004.

TKO SOFTWARE

Santa Cruz, CA

Quality assurance engineer, 2003.

Funding

Planning: Enhancing Speech Therapy Through Multimodal Artificial Intelligence, NYU Discovery Research Fund for Human Health, \$20,000, 2024. **PI:** Tara McAllister, **Co-PIs:** Hai Shu, Brian McFee.

Classroom Orchestration Assistant Based on Automated Ambient Sound Classification, 2022. MARL Seed Award, \$12,000. **Co-PIs:** Xavier Ochoa and Brian McFee.

III: Medium: Spatial Sound Scene Description (S3D), National Science Foundation award 1955357. \$999,875.00, 2020. **PI:** Juan Pablo Bello, **Co-PIs:** Agnieszka Roginska, Mark Cartwright, Brian McFee.

NRT-HDR: FUTURE Foundations, Translation, and Responsibility for Data Science Impact, National Science Foundation award 1922658. \$3,000,000.00, 2019. **PI:** Brian McFee (since 2023), **Co-PIs:** Julia Stoyanovich, Brenden Lake, Kyunghyun Cho, Carlos Fernandez Granda, Julia Kempe (PI 2019–2023).

AudioXD: Seeding a new multi-disciplinary, multi-university network of data scientists working with audio recordings. Academic Data Science Alliance (ADSA) seed grant, 2019. \$50,000. **PI:** Justin Kitzes, **Co-PIs:** Brian McFee, Daniel Turek.

The SpokenWeb: conceiving and creating a nationally networked archive of literary recordings for research and teaching. Social Sciences and Humanities Research Council (Canada) partnership grant, 2019. Sub-award from Concordia University: \$9,396. **PI:** Jason Camlot.

Awards and honors

Steinhardt Teaching Excellence Award, New York University, 2022.

ISMIR Best student paper award, for **Deep salience representations for f_0 estimation in polyphonic music** (with R. Bittner as primary author), Suzhou, CN, 2017.

ISMIR Best oral presentation award, for **Analyzing song structure with spectral clustering**, Taipei, TW, 2014.

ISMIR Best poster presentation award, for **mir_eval: a transparent implementation of common MIR metrics**, Taipei, TW, 2014.

NeurIPS Reviewer Award, Neural Information Processing Systems, Lake Tahoe, CA, 2013.

Music Hack Day — Soundcloud prize, for **Mend-a-break**, Philadelphia, PA, 2013.

Music Hack Day — Echo Nest prize, for **Auto-chip-tune**, Boston, MA, 2012.

ISMIR Best poster presentation award, for **The natural language of playlists**, Miami, FL, 2011.

Qualcomm Innovation Fellowship, for **Location-, Demographic-, Preference- and Content-Based Music Search and Recommendation**, 2010–2011. (With L. Barrington.)

ISMIR Best presentation award, for **Heterogeneous embedding for subjective artist similarity**, Kobe, JP, 2009.

Publications


















🎓 = student-led publication, 🧑 = postdoc-led publication; otherwise, lead authors are peers. Author order conventions vary by venue; typically lead author is first and faculty supervisors are last. This does not generally apply to cross-institutional publications (denoted by 🌐).

Journal articles



1. 🎓 M. Buisson, B. McFee, S. Essid, and H. C. Crayencour. Self-supervised learning of multi-level audio representations for music segmentation. *IEEE Transactions on Audio, Speech, and Language Processing*, 2024c.
2. 🌐 K.M. Kinnaird and B. McFee. Automatic hierarchy expansion for improved structure and chord evaluation. *Transactions of the International Society for Music Information Retrieval*, 4(1):81–92, 2021. doi: 10.5334/tismir.71. URL <http://doi.org/10.5334/tismir.71>.
3. 🌐 M. Müller, B. McFee, and K. Kinnaird. Interactive learning of signal processing through music. *IEEE Signal Processing Magazine*, 2021.
4. 🌐 O. Nieto, G.J. Mysore, C. Wang, J.B.L. Smith, J. Schlüter, T. Grill, and B. McFee. Audio-based music structure analysis: current trends, open challenges, and applications. *Transactions of the International Society for Music Information Retrieval*, 2020.
5. 🌐 D. Huppenkothen, B. McFee, and L. Norén. Entropy your cohort: A transparent method for diverse cohort selection. *PLoS One*, 2020.
6. B. McFee, J. W. Kim, M. Cartwright, J. Salamon, R. M. Bittner, and J. P. Bello. Open-source practices for music signal processing research: Recommendations for transparent, sustainable, and reproducible audio research. *IEEE Signal Processing Magazine*, 36(1):128–137, Jan 2019. ISSN 1053-5888. doi: 10.1109/MSP.2018.2875349.
7. 🧑 V. Lostanlen, J. Salamon, M. Cartwright, B. McFee, A. Farnsworth, S. Kelling, and J. P. Bello. Per-channel energy normalization: Why and how. *IEEE Signal Processing Letters*, 26(1):39–43, Jan 2019a. ISSN 1070-9908. doi: 10.1109/LSP.2018.2878620.
8. B. McFee, J. Salamon, and J. P. Bello. Adaptive pooling operators for weakly labeled sound event detection. *IEEE/ACM Transactions on Audio, Speech, and Language Processing*, 26(11):2180–2193, Nov 2018. ISSN 2329-9290. doi: 10.1109/TASLP.2018.2858559.
9. B. McFee, O. Nieto, M. Farbood, and J.P. Bello. Evaluating hierarchical structure in music annotations. *Frontiers in Psychology*, 8:1337, 2017b. ISSN 1664-1078. doi: 10.3389/fpsyg.2017.01337. URL <http://journal.frontiersin.org/article/10.3389/fpsyg.2017.01337>.
10. B. McFee. resampy: efficient sample rate conversion in python. *The Journal of Open Source Software*, 2016. doi: 10.21105/joss.00125.
11. 🎓 Y. Vaizman, B. McFee, and G.R.G. Lanckriet. Codebook based audio feature representation for music information retrieval. *IEEE Transactions on Audio, Speech, and Language Processing*, 22(10):1483–1493, 2014.
12. C. Galleguillos, B. McFee, and G.R.G. Lanckriet. Iterative category discovery via multiple kernel metric learning. *International Journal of Computer Vision*, pages 1–18, 2013.
13. B. McFee, L. Barrington, and G.R.G. Lanckriet. Learning content similarity for music recommendation. *IEEE Transactions on Audio, Speech, and Language Processing*, 20(8), 2012a.

14. B. McFee and G.R.G. Lanckriet. Learning multi-modal similarity. *Journal of Machine Learning Research*, 12:491–523, February 2011.
15. B. McFee, C. Galleguillos, and G.R.G. Lanckriet. Contextual object localization with multiple kernel nearest neighbor. *IEEE Transactions on Image Processing*, 20(2):570–585, Feb 2011. ISSN 1057-7149.

Peer-reviewed conference publications

1.  B. McFee. Quantifying Regularity in Music Structure Analysis. In *26th International Society for Music Information Retrieval (ISMIR) (2025)*, Daejeon, South Korea, 2025.
2.  Q. Xi and B. Mcfee. Lose the Frames: Event-based Metrics for Efficient Music Structure Analysis Evaluations. In *26th International Society for Music Information Retrieval (ISMIR) (2025)*, Daejeon, South Korea, 2025.
3.  E. Georgieva, P. Ripollés, and B. McFee. A listener-evaluated dataset of amateur karaoke singing and audiobook narration . In *Audio Engineering Society (AES) International Conference on Artificial Intelligence and Machine Learning*, London, UK, 2025.
4.   V. Deng, C. Wang, B. McFee, and G. Richard. Investigating sensitivity of pre-trained audio embeddings. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2025.
5.   H. Tian, B. McFee, C. Saitis, and S. Lattner. Hybrid losses for hierarchical embedding learning. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2025.
6.   M. Buisson, B. McFee, and S. Essid. Using pairwise link prediction and graph attention networks for music structure analysis. In *Proceedings of the 25th International Society for Music Information B Retrieval Conference, ISMIR 2024, San Francisco, USA, November 10-14, 2024*, 2024b.
7.  E. Georgieva, P. Ripollés, and B. McFee. The changing sound of music: An exploratory corpus study of vocal trends over time. In *Proceedings of the 25th International Society for Music Information Retrieval Conference, ISMIR 2024, San Francisco, USA, November 10-14, 2024*, 2024.
8.  I.R. Román, C. Ick, S. Ding, A.S. Roman, B. McFee, and J.P. Bello. Spatial scaper: A library to simulate and augment soundscapes for sound event localization and detection in realistic rooms. In *ICASSP*, volume abs/2401.12238, 2024. doi: 10.48550/ARXIV.2401.12238. URL <https://doi.org/10.48550/arXiv.2401.12238>.
9.   C.Wang, G. Richard, and B. McFee. Transfer learning and bias correction with pre-trained audio embeddings. In *Proceedings of the 24th International Society for Music Information Retrieval Conference, ISMIR 2023, Milan, Italy, November 5-9, 2023*, pages 64–70, 2023. doi: 10.5281/ZENODO.10265223. URL <https://doi.org/10.5281/zenodo.10265223>.
10.   M. Buisson, B. McFee, S. Essid, and H.C. Crayencour. A repetition-based triplet mining approach for music segmentation. In *Proceedings of the 24th International Society for Music Information Retrieval Conference, ISMIR 2023, Milan, Italy, November 5-9, 2023*, pages 417–424, 2023. doi: 10.5281/ZENODO.10265313. URL <https://doi.org/10.5281/zenodo.10265313>.
11.  C. Ick and B. McFee. Leveraging geometrical acoustic simulations of spatial room impulse responses for improved sound event detection and localization. In *Workshop on Detection and Classification of Acoustic Scenes and Events (DCASE)*, 2023. doi: 10.48550/ARXIV.2309.03337. URL <https://doi.org/10.48550/arXiv.2309.03337>.
12.  V. Lostanlen and B. McFee. Efficient evaluation algorithms for sound event detection. In *Proceedings of the 8th Detection and Classification of Acoustic Scenes and Events 2023 Workshop (DCASE2023)*, pages 111–115, Tampere, Finland, September 2023.

13. 🎧 K. Choi, J. Im, L. Heller, B. McFee, K. Imoto, Y. Okamoto, M. Lagrange, and S. Takamichi. Foley sound synthesis at the DCASE 2023 challenge. 2023. doi: 10.48550/ARXIV.2304.12521. URL <https://doi.org/10.48550/arXiv.2304.12521>.
14. 🎧 🎓 J. Guo and B. McFee. Automatic recognition of cascaded guitar effects. In *Proceedings of the 26th International Conference on Digital Audio Effects (DAFx23)*, Copenhagen, Denmark, September 2023.
15. 🎧 🎓 M. Buisson, B. Mcfee, S. Essid, and H.C. Crayencour. Learning multi-level representations for hierarchical music structure analysis. In *International Society for Music Information Retrieval (ISMIR)*, 2022.
16. 🎓 C. Ick and B. McFee. Sound event detection in urban audio with single and multi-rate PCEN. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2021.
17. 🎓 H.H. Wu, C.C. Kao, Q. Tang, M. Sun, B. McFee, J.P. Bello, and C. Wang. Multi-task self-supervised pre-training for music classification. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2021.
18. 🎧 🎓 H. Cuesta, B. McFee, and E. Gómez. Multiple fo estimation in vocal ensembles using convolutional neural networks. In *International Society for Music Information Retrieval Conference, ISMIR*, 2020.
19. 💡 V. Lostanlen, S. Sridhar, B. McFee, A. Farnsworth, and J.P. Bello. Learning the helix topology of musical pitch. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2019b.
20. 🎧 B. McFee and K. Kinnaird. Improving structure evaluation through automatic hierarchy expansion. In *20th International Society for Music Information Retrieval Conference, ISMIR*, 2019.
21. 🎓 A. Cohen-Hadria, M. Cartwright, B. McFee, and J.P. Bello. Voice anonymization in urban sound recordings. In *IEEE International Workshop on Machine Learning for Signal Processing*, 2019.
22. 🎧 C. Tralie and B. McFee. Enhanced hierarchical music structure annotations via feature level similarity fusion. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2019.
23. 🎓 M. Fuentes, B. McFee, H. Crayencour, S. Essid, and J.P. Bello. A music structure informed downbeat tracking system using skip-chain conditional random fields and deep learning. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2019.
24. 🎧 E.J. Humphrey, S. Durand, and B. McFee. OpenMIC-2018: An open dataset for multiple instrument recognition. In *19th International Society for Music Information Retrieval Conference, ISMIR*, 2018.
25. 🎓 M. Fuentes, B. McFee, H. Papadopoulos, S. Essid, and J.P. Bello. Analysis of common design choices in deep learning systems for downbeat tracking. In *19th International Society for Music Information Retrieval Conference, ISMIR*, 2018.
26. 🎓 V. Trinh, B. McFee, and M. Mandel. Bubble cooperative networks for identifying important speech cues. In *InterSpeech*, 2018.
27. 🎧 B. McFee and J.P. Bello. Structured training for large-vocabulary chord recognition. In *18th International Society for Music Information Retrieval Conference, ISMIR*, 2017.
28. 🎓 R.M. Bittner, B. McFee, J. Salamon, P. Li, and J.P. Bello. Deep salience representations for f_0 estimation in polyphonic music. In *18th International Society for Music Information Retrieval Conference, ISMIR*, 2017. Winner of the best student paper award.



29. B. McFee, E.J. Humphrey, and J. Urbano. A plan for sustainable MIR evaluation. In *17th International Society for Music Information Retrieval Conference, ISMIR*, 2016.
30. B. McFee, E.J. Humphrey, and J.P. Bello. A software framework for musical data augmentation. In *16th International Society for Music Information Retrieval Conference, ISMIR*, 2015a.
31. B. McFee, O. Nieto, and J.P. Bello. Hierarchical evaluation of segment boundary detection. In *16th International Society for Music Information Retrieval Conference, ISMIR*, 2015b.
32. B. McFee and D.P.W. Ellis. Analyzing song structure with spectral clustering. In *Proceedings of the 15th International Society for Music Information Retrieval Conference, ISMIR*, 2014c.
33.  C. Raffel, B. McFee, J. Salamon, E.J. Humphrey, O. Nieto, D. Liang, and D.P.W. Ellis. mir_eval: a transparent implementation of common MIR metrics. In *Proceedings of the 15th International Society for Music Information Retrieval Conference, ISMIR*, 2014.
34.  Z. Chen, B. McFee, and D.P.W. Ellis. Speech enhancement by low-rank and convolutive dictionary spectrogram decomposition. In *Interspeech*, 2014.
35. B. McFee and D.P.W. Ellis. Learning to segment songs with ordinal linear discriminant analysis. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2014b.
36. B. McFee and D.P.W. Ellis. Better beat tracking through robust onset aggregation. In *IEEE International conference on acoustics, speech and signal processing, ICASSP*, 2014a.
37. D.K. Lim, B. McFee, and G.R.G. Lanckriet. Robust structural metric learning. In *Proceedings of the 30th annual International Conference on Machine Learning, ICML*, June 2013.
38. B. McFee and G.R.G. Lanckriet. Hypergraph models of playlist dialects. In *Proceedings of the 13th International Society for Music Information Retrieval Conference, ISMIR*, 2012.
39. J. Urbano, J.S. Downie, B. McFee, and M. Schedl. How significant is statistically significant? The case of audio music similarity and retrieval. In *Proceedings of the 13th International Society for Music Information Retrieval Conference, ISMIR*, 2012.
40. B. McFee and G.R.G. Lanckriet. The natural language of playlists. In *Proceedings of the 12th International Society for Music Information Retrieval Conference, ISMIR*, pages 537–541, 2011b. Winner of the best poster presentation award.
41. B. McFee and G.R.G. Lanckriet. Large-scale music similarity search with spatial trees. In *Proceedings of the 12th International Society for Music Information Retrieval Conference, ISMIR*, pages 55–60, 2011a.
42. C. Galleguillos, B. McFee, S. Belongie, and G.R.G. Lanckriet. From region similarity to category discovery. In *IEEE Computer Society Conference on Computer Vision and Pattern Recognition, CVPR*, 2011.
43. B. McFee, L. Barrington, and G.R.G. Lanckriet. Learning similarity from collaborative filters. In *Proceedings of the 11th International Society for Music Information Retrieval Conference, ISMIR*, 2010.
44. N. Koenigstein, G.R.G. Lanckriet, B. McFee, and Y. Shavitt. Collaborative filtering based on P2P networks. In *Proceedings of the 11th International Society for Music Information Retrieval Conference, ISMIR*, August 2010.
45. B. McFee and G.R.G. Lanckriet. Metric learning to rank. In *Proceedings of the 27th International Conference on Machine Learning, ICML*, pages 775–782, Haifa, Israel, June 2010a.

46. C. Galleguillos, B. McFee, S. Belongie, and G.R.G. Lanckriet. Multi-class object localization by combining local contextual interactions. In *IEEE Computer Society Conference on Computer Vision and Pattern Recognition, CVPR*, pages 113–120, 2010.
47. B. McFee and G.R.G. Lanckriet. Heterogeneous embedding for subjective artist similarity. In *Proceedings of the 10th International Society for Music Information Retrieval Conference, ISMIR*, 2009a. Winner of the best presentation award.
48. B. McFee and G.R.G. Lanckriet. Partial order embedding with multiple kernels. In *Proceedings of the 26th International Conference on Machine Learning, ICML*, pages 721–728, 2009b.



Books

1. B. McFee. *Digital Signals Theory*. CRC Press, 2023. URL <https://brianmcfree.net/dstbook-site/>.






Book chapters

1.  M. Schedl, P. Knees, B. McFee, and D. Bogdanov. Music recommender systems. In F. Ricci, L. Rokach, and B. Shapira, editors, *Recommender Systems Handbook*. Springer US, 3rd edition, 2021. Note: this chapter was entirely rewritten for the third edition, and is kept distinct from the earlier chapter listed below.
2. B. McFee. Statistical methods for scene and event classification. In T. Virtanen, M. Plumbley, and D. Ellis, editors, *Computational Analysis of Sound Scenes and Events*, pages 103–146. Springer International Publishing, Cham, 2018. ISBN 978-3-319-63450-0. doi: 10.1007/978-3-319-63450-0_5. URL https://doi.org/10.1007/978-3-319-63450-0_5.
3.  M. Schedl, P. Knees, B. McFee, D. Bogdanov, and M. Kaminskas. Music recommender systems. In F. Ricci, L. Rokach, and B. Shapira, editors, *Recommender Systems Handbook*, pages 453–492. Springer US, 2nd edition, 2015.

Tutorials

1.  B. McFee, J. Lee, and J. Nam. ISMIR tutorial on metric learning for music information retrieval, 2020.
2.  B. McFee and T. Clement. Introduction to sound analysis workshop, 2019. Association for Computers and the Humanities Conference.
3. B. McFee and T. Kell. ISMIR tutorial on open source and reproducible MIR research, 2018.

Demos, workshops, and other work

1.   Junwon Lee, Modan TAILLEUR, Mathieu Lagrange, Keunwoo Choi, Laurie M. Heller, Brian McFee, Keisuke Imoto, and Yuki Okamoto. Challenges in text-to-audio synthesis: From foley to sound scenes. In *Audio Imagination: NeurIPS 2024 Workshop AI-Driven Speech, Music, and Sound Generation*, 2024.
2.   M. Buisson, C. Ick, Q. Xi, and B. McFee. Zero-shot structure labeling with audio and language model embeddings. In *International Society for Music Information Retrieval Late-breaking / Demos*, 2024a.
3.  G. Morais, B. McFee, and M. Fuentes. Skip that beat: Augmenting meter tracking models for underrepresented time signatures. In *Latin American Music Information Retrieval Workshop*, 2024.

4. 🎓 E. Georgieva, P. Ripollés, and B. McFee. Total variation in vocals over time. In *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)*, New Paltz, NY, USA, 2023.
5. 🎓 Q. Xi and B. McFee. Beyond hard decisions: Accounting for uncertainty in deep MIR models, 2021. ISMIR Late-breaking/demo.
6. 🎓 J. Tumminia, A. Kuznecov, S. Tsilerides, I. Weinstein, B. McFee, M. Picheny, and A.R. Kaufman. Diarization of legal proceedings. identifying and transcribing judicial speech from recorded court audio. *CoRR*, abs/2104.01304, 2021. URL <https://arxiv.org/abs/2104.01304>.
7. T. Kell, B. McFee, and B. Lacker. Amen, amen server, amen.js: Tools for algorithmic remixing, 2017. ISMIR Late-breaking/demo.
8. J. Salamon, B. McFee, and P. Li. DCASE 2017 submission: Multiple instance learning for sound event detection. Technical report, DCASE2017 Challenge, September 2017.
9. B. McFee, E.J. Humphrey, and C. Jacoby. Pescador: a stream manager for iterative learning. In *Scientific computing with Python*, SciPy, 2017a.
10. B. McFee and F. Upham. Interpreting musical taste through playlists. In *Meeting of the Society for Music Perception and Cognition*, SMPc, 2015.
11. B. McFee, C. Raffel, D. Liang, D.P.W. Ellis, M. McVicar, E. Battenberg, and O. Nieto. librosa: Audio and music signal analysis in python. In *14th annual Scientific Computing with Python conference*, SciPy, July 2015c.
12. B. McFee and D.P.W. Ellis. DP₁, MP₁, MP₂ entries for MIREX2013 structural segmentation and beat tracking, 2013. Ninth Music Information Retrieval Evaluation eXchange.
13. B. McFee, T. Bertin-Mahieux, D.P.W. Ellis, and G.R.G. Lanckriet. The million song dataset challenge. In *Proceedings of the 2nd International Workshop on Advances in Music Information Retrieval*, AdMIRE, 2012b.
14. B. McFee and G.R.G. Lanckriet. Audio music similarity via metric learning, 2011c. Seventh Music Information Retrieval Evaluation eXchange.
15. B. McFee and G.R.G. Lanckriet. Integrating multi-modal data by metric learning, 2010b. 11th ACM SIGMM International Conference on Multimedia Information Retrieval.

Invited seminars

Making audio data accessible for large-scale analysis, SpokenWeb Futures Symposium, 2024.

Introduction to audio processing in Python, HuggingFace Audio Transformers Course (virtual), 2023.

Open Source Panel, SpeechBrain Summit (virtual), 2023.

Reproducibility, open source, and open data in Music Information Retrieval research, Reproducibility in Signal Processing, CNRS, FR (virtual), 2021.

Music Information Retrieval, NYC AI Workshop, New York University, 2019.

Discovering multi-level structure in music, Data Science Tea, University of Massachusetts Amherst, 2019.

Making efficient use of musical annotations, Machine Learning for Music Discovery Workshop, ICML, Long Beach, CA, USA, 2019.

Introduction to Sound Analysis, Good Systems: Acoustic Surveillance & Big Data Series, University of Texas Austin, 2019.

Music information retrieval, SpaRTaN/MacSeNet Summer school (SPARS conference), Lisbon, PT, 2017.

Guest lecturer, ELEN6820, Speech and audio signal processing, Columbia University, 2017.

Guest lecturer, DS-GA 1008, Deep learning, New York University, 2016.

Exposing hierarchy through graph analysis, Schloss Dagstuhl seminar on Computational Music Structure Analysis, Wadern, DE, 2016.

The role of structure analysis in music discovery, Machine Learning for Music Discovery Workshop, ICML, Lille, FR, 2015.

Guest lecturer, CS5660, Signal and image processing, Cornell Tech, 2013.

Guest lecturer, CS5785, Modern analytics, Cornell Tech, 2013.

Music information retrieval: challenges in jazz, Jazz and Technology Forum, New York, NY, 2013.

Modeling playlists by context, Fifth Recommender Stammtisch, Berlin, DE, December 2012.

Learning musical similarity from heterogeneous sources, Pomona College, March 2010.

Teaching experience

Instructor, DS-GA 1006, Capstone, NYU, Fall 2023, 2024. *Required*.

Instructor, DS-GA 3001, Search and discovery, NYU, Fall 2020. *Elective*. *New prep*.

Instructor, DS-GA 1004, Big Data, NYU, Spring 2019, 2020, 2021, 2022, 2023. *Required*. *Re-designed in Spring 2019*.

Instructor, MPATE-GE 2599, Fundamentals of Digital Signal Theory I, NYU, Fall 2018, 2019, 2020, 2021, 2022, 2023, 2024. *Required*. *Redesigned in Fall 2018 and overhauled in Fall 2020*.

Co-instructor, CCRMA Workshop on Music Information Retrieval, Stanford University, Summer 2018. *Week-long workshop, new prep*.

Co-instructor, DS-GA 1009, Practical training for data science, New York University, 2016.

Co-instructor, EECS E6891, Reproducing computational results, Columbia University, 2014.

Teaching assistant mentor, Computer Science & Engineering, UCSD, 2010–2012.

Doctoral and Masters thesis supervision

Currently supervising two (2) doctoral students in Music Technology (2018–).

Currently supervising one (1) doctoral student in Data Science (2019–).

Remotely co-supervising one (1) doctoral student at Telecom-Paris (2021–).

Supervised 30 successfully defended Masters theses in Music Technology.

Currently supervising 7 in-progress Masters theses in Music Technology.

Currently supervising one (1) in-progress Masters thesis in Gallatin.

Supervised 16 Data Science masters students' capstone projects, and co-supervised 4 more during a capstone continuation.

Supervised 4 Music Technology undergraduate capstone projects.

Supervised one (1) Masters student visiting NYU on a Fulbright scholarship (2022–2023).

Ph.D. committees

Amanda Eads, Communicative Science and Disorders, New York University, 2024–.

Alon Ziv, Hebrew University, 2024–.

Morgan Buisson, Sorbonne University / Telecom-Paris, 2021–.

Tristan Carsault, Sorbonne University / IRCAM, 2020.

Radha Kopparti, City University of London, 2020.

Guillaume Doras, UPMC, 2020.

Jong Wook Kim, Music Technology, New York University, 2019.

Brandon Morton, Electrical Engineering, Drexel University, 2016.

Colin Raffel, Electrical Engineering, Columbia University, 2016.

Other academic mentorship

Supervised one undergraduate research assistant via the CDS Undergraduate Research Program (CURP), 2022.

Supervised a group of 5 Data Science Masters students via the Women in Data Science (WIDS) summer research incubator, 2020.

Co-supervised two visiting doctoral students in Spring and Summer of 2019.

Supervised four graduate students from Music Technology and Data Science as research assistants on various projects related to S3D and SpokenWeb, 2020–2021.

University service

Center for Data Science, Director of Graduate Studies (MS program), 2024.

NYU Steinhardt Teaching Excellence Award Committee. (*Year(s) redacted*)

Center for Data Science, Faculty Fellows search committee, 2019, 2020, 2021.

Center for Data Science / Women in Data Science Summer Incubator project mentor, 2020.

M.S. Admissions committee, Center for Data Science, NYU, 2015, 2017; chair 2025.

Doctoral candidacy examination committee, Music Technology, NYU, 2016.

Co-organizer of the Center for Data Science weekly lunch seminar, NYU, 2015.

Professional service

Panelist, National Science Foundation (Division of Graduate Education), 2024.

Scientific program committee co-chair, *International Society for Music Information Retrieval (ISMIR) Conference*, 2024.

Co-Organizer, *Dagstuhl Seminar #24302: Learning with Music Signals: Technology Meets Education*, 2024.

Co-Organizer, *DCASE Challenge Task 7: Sound Scene Synthesis*, 2024.

Co-Organizer, *DCASE Challenge Task 7: Foley Sound Synthesis*, 2023.

Reviewer, *Scientific Reports*, 2023–2024.

Scientific program committee co-chair, *International Society for Music Information Retrieval (ISMIR) Conference*, 2020.

Mentor, *Women in Music Information Retrieval mentoring program*, 2017–.

Editor, *Journal of Open Source Software (JOSS)*, 2020–.

Senior program committee, *International Joint Conference on Artificial Intelligence (IJCAI)*, 2020.

Local organization, *International Society for Music Information Retrieval (ISMIR) Conference*, 2016.

Ad hoc reviewer, National Science Foundation (Information & Intelligent Systems division), 2016.

Panelist, National Science Foundation (Information & Intelligent Systems division), 2014.

Advisory board member, *Audiovisual Metadata Platform / Pilot Development*, Indiana University Libraries, 2018–2020.

Committee member, *J-Disc task force*, 2014–2017.

Co-organizer of the Million Song Dataset Challenge, with T. Bertin-Mahieux, D.P.W. Ellis, and G.R.G. Lanckriet, 2012.

Reviewer, *Journal of Open Source Software (JOSS)*, 2018–2020.

Reviewer, *Journal of Open Research Software (JORS)*, 2017.

Reviewer, *International Conference on Machine Learning (ICML)*, 2012–2018, 2021–.

Reviewer, *International Conference on Learning Representations (ICLR)*, 2018–.

Reviewer, *Neural Information Processing Systems (NeurIPS)*, 2011–.

Reviewer, *Journal of Machine Learning Research*, 2011–2018.

Reviewer, *International Society for Music Information Retrieval (ISMIR) Conference*, 2009–.

Reviewer, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2012–2018.

Reviewer, *IEEE Transactions on Multimedia*, 2012–2013, 2019.

Reviewer, *IEEE Transactions on Audio, Speech and Language Processing*, 2010–.

Reviewer, *International Journal of Multimedia Information Retrieval*, 2020.

Reviewer, *Transactions of the International Society for Music Information Retrieval*, 2019–.

Reviewer, *Workshop on Applications of Signal Processing to Audio and Acoustics*, 2021–.

Reviewer, *PLoS One*, 2019–2020.

Reviewer, *Detection and Classification of Acoustic Scenes and Events (DCASE)*, 2018–.

Reviewer, *SciPy conference*, 2017–.

Program committee co-chair, *Second Workshop on Music Recommendation and Discovery (WOMRAD)*, with A. Anglade, Ò. Celma, B. Fields and P. Lamere, 2011.

Program committee member, *International Joint Conference on Artificial Intelligence*, 2011.

Co-organizer of the Understanding Multiple Kernel Learning Methods Workshop, with F. Bach, G.R.G. Lanckriet, and N. Srebro, NeurIPS 2009.

Manager of the UC San Diego Multiple Kernel Learning Repository, <http://mkl.ucsd.edu>, 2009–2012.