juliawilkins88@gmail.com
248.633.3144
www.linkedin.com/in/juliawilkins1
juliawilkins.github.io
Brooklyn, New York

JULIA WILKINS

Education

New York University, PhD | New York, NY | *2021-present*
Computer Science PhD Candidate studying with Prof. Juan Bello and Prof. Magdalena Fuentes in the Music and Audio Research Laboratory (MARL). **Research interests: audio representation learning, latent space controllability and disentanglement, multimodal representation learning, machine listening.**

Northwestern University, B.S. | Evanston, IL | *2014-2018*
Student research assistant in the Interactive Audio Lab advised by Prof. Bryan Pardo and Dr. Prem Seetharaman. Dual Major: **Computer Science** and **Music Technology.**

Work Experience

SiriusXM/Pandora
Audio Research Scientist Intern | New York, NY / Remote | *June 2025-Sept. 2025*
Researched music representation learning techniques for transforming the genre of embeddings of songs in a retrieval setting. Supervised by Matt McCallum, Andreas Ehmann, Matthew Davies, Jaehun Kim.

Bosch Research
Audio Research Scientist Intern | Pittsburgh, PA / Remote | *June 2024-Sept. 2024*
Developed methods for explainable audio representation learning of controlled soundscapes via object-centric learning techniques. Supervised by Luca Bondi, Ho-Hsiang Wu, Winston Lin.

Adobe Research
Audio Research Scientist Intern | San Francisco, CA / Remote | *May 2022-Dec. 2022, June 2023-Dec. 2023*
Developed cutting-edge representation learning methods for audio-visual retrieval tasks leveraging pre-trained multimodal models such as CLIP and Wav2CLIP through two research internships under the guidance of Justin Salamon and Orion Nieto. Resulting work was published in WASPAA 2023.

Sonos, Inc.
Data Scientist/Engineer | Seattle, WA | *Aug. 2018-July 2021*
- Data Science: Led the development of Sonos' first production-level NLP model to analyze customer survey data.
- Data Engineering: Core developer of end-to-end data pipeline processing terabytes of product usage data daily.

Interactive Audio Lab, Northwestern University
Undergraduate Research Assistant | Evanston, IL | *Jan. 2017-June 2018*
Working under Bryan Pardo on a variety of music-information retrieval and audio-based machine/deep learning projects.

Music and Audio Research Lab, New York University
Research Assistant | New York, NY | *June-Aug. 2016*
Developed a Python application to error-proof audio files collected for MedleyDB, a large annotated dataset of multitrack audio files used for music information retrieval research.

Publications

Wilkins, J., Ding, S., Fuentes, M., Bello, J. P. **Balancing Information Preservation and Disentanglement in Self-Supervised Music Representation Learning.** *In Proceedings of WASPAA 2025.*

Ding, S., **Wilkins, J.,** Fuentes, M., Bello, J. P. **Latent Multi-view Learning for Robust Environmental Sound Representations.** *In Proceedings of DCASE 2025 Workshop.*

Wilkins, J., Ding, S., Fuentes, M., Bello, J. P. **Self-Supervised Multi-View Representation Learning for Disentangled Music Audio Representations.** *Late Breaking Demo at ISMIR 2024.*

Wilkins, J., Salamon, J., Fuentes, M., Bello, J. P., & Nieto, O. **Bridging High-Quality Audio and Video Via Language for Sound Effects Retrieval from Visual Queries.** *In Proceedings of WASPAA 2023.*

Wilkins, J., Fuentes, M., Bondi, L., Ghaffarzadegan, S., Abavisani, A., Bello, J.P. **Two vs. Four-Channel Sound Event Localization and Detection.** *In Proceedings of DCASE 2023 Workshop.*

Fuentes, M., **Wilkins, J.,** et al. **Urban Sight & Sound: Dataset and Benchmark for Audio-Visual Scene Understanding**. *In Proceedings of ICASSP 2022.*

Wilkins, J., Fuentes, M., et al. **Exploring a Probabilistic Approach to Vehicle Sound Source Localization in Urban Scenes**. *In Workshop of Sight and Sound at CVPR 2022.*

Wilkins, J., Seetharaman P., Wahl, A., Pardo, B. **VocalSet: A Singing Voice Dataset**. *In Proceedings of ISMIR 2018.*

Bittner, R., **Wilkins, J.**, Yip, H., Bello, J. **MedleyDB 2.0: New Data and a System for Sustainable Data Collection**. *Late Breaking Demo at ISMIR 2016.*

Technical Skills

Programming Languages: Python (PyTorch, Lightning, WandB, Neptune, NumPy, Pandas, PyTest, Tensorflow), SQL.

Technologies: Git, Bash, Snowflake Cloud Database, Tableau, AWS (Athena, S3, Lambda).

Patents

Wilkins, J., Nieto-Caballero, O., Salamon, J. *Adobe, Inc.* **Multi-Modal Sound Effects Recommendation**. US Patent No. 20240220530. 2024 July 04.

Morgenstern, M., Littooy, B., **Wilkins, J.** *Sonos, Inc.* **Systems and methods for extracting data views from heterogenous sources**. US Patent No. 20210303569. 2023 June 13.

Teaching and Academic Service

Lead Course Assistant: Machine Listening (CS-GY 9223) | New York University | Spring 2025

Designed course materials with Prof. Juan Bello including lectures, coding assignments, and course projects related to machine listening and held weekly office hours.

Course Assistant: Graduate Seminar in Music Technology (MPATE-GE 2600) | New York University | Fall 2025

Graded APA-style student research papers on topics in music technology and music information retrieval.

Academic Service: Conference Reviewing

ICASSP (2022-2025), DCASE (2023), WASPAA (2023), ISMIR (2023-2024), LAMIR (2024).

Microsoft TEALS Volunteer Teacher | Remote / Seattle, WA | June 2019-Aug. 2021

Led two, year-long remote high school courses introducing computer science to young students in Snap and Python.