Jason Brent Smith

807 Davis St Apt 1103, **Evanston, IL 60201**
(561) 315 – 4174 | jason.smith1@northwestern.edu
Department of Computer Science | Northwestern University
Google Scholar | LinkedIn

EMPLOYMENT & EDUCATION

Postdoctoral Scholar, Department of Computer Science
Northwestern University, Evanston, IL, 2024 - Current

Doctor of Philosophy, Music Technology
Georgia Institute of Technology, Atlanta, GA, 2020 - 2024

- Thesis: *Human-AI Partnerships in Gesture-Controlled Interactive Music Systems*. Supervisor: Jason Freeman. Committee: Gil Weinberg, Brian Magerko, Jeff Albert, and Sang Won Lee.
- Qualifying Exam Fields: Music Technology History & Repertoire, Music Perception & Cognition, Digital Signal Processing, Interactive Music, Human-AI Interaction

Master of Science, Music Technology
Georgia Institute of Technology, Atlanta, GA, 2018 - 2020

- Master's Project: *Expressive Prosthetic Control for Musicians using Electromyography and Deep Learning*
- Advisor: Gil Weinberg

Bachelor of Science, Music Engineering and Technology
University of Miami, Coral Gables, FL, 2014 - 2018

- Capstone Project: *Machine Learning-Based Jazz Bassline Performance System*
- Advisors: Christopher Bennett, Will Pirkle, Joe Abbati
- Minor in Computer Engineering

AWARDS

Best Long Paper (student-led), 2021, 12th International Conference on Computational Creativity

Convergence Innovation Competition Runner Up, 2021, Georgia Institute of Technology

Herbert P. Haley Fellowship, 2018-2019, Georgia Institute of Technology

Foote Fellows Honors Program, 2014-2018, University of Miami

Isaac Bashevis Singer Scholarship, 2014-2018, University of Miami

TEACHING EXPERIENCE

Teacher: Machine Perception of Music and Audio (Undergraduate/Graduate) – CS 352, Northwestern University (Spring 2026)

- Machine extraction of structure in audio files covering areas such as source separation (unmixing audio recordings into individual component sounds), sound object recognition (labeling sounds), melody tracking, beat tracking, and perceptual mapping of audio to machine-quantifiable measures.

Teaching Assistant: Audio Software Engineering (Graduate) – MUSI 6106, Georgia Tech Center for Music Technology (Spring 2022)

- Introduction to software engineering for audio-related software projects with a focus on real-time software requirements and code performance.
- Provided lectures on coding structures and API development. Oversaw regular student team meetings. Graded student test suites and assisted students via office hours.

Teaching Assistant: Interactive Music (Undergraduate/Graduate) – MUSI 4670/6002, Georgia Tech Center for Music Technology (Fall 2021)

- Theoretical and practical issues in computer-supported interactive music, with readings and projects structured around knowledge of key elements of interactive music systems: audio/sensor input, sound synthesis, generative music, and interactive mapping of inputs to audio outputs.
- Provided lectures on machine learning, generative music systems, and gestural recognition. Graded Assignments and group projects in terms of creativity, novelty, and technical proficiency and assisted students via office hours.

GRANTS

NSF Award #2300631- *Collaborative Research: Engaging Blind and Visually Impaired Youth in Computer Science through Music Programming,* $2,124,522, 6/1/2023 – Present. Role: lead student researcher, development of interview protocol documents. Collaboration with Northwestern University (award # 2300633) and University of North Texas (award #2300632).

NSF Award #1814083 - *Collaborative Research: Engaging High School Students in Computer Science with Co-Creative Learning Companions,* $2,119,822, 9/15/2018 – 8/31/2023. Role: lead student developer/researcher. Collaboration with the University of Florida (award #1813740).

Your Voice Is Power Competition, ~$2,000,000, 7/1/19 – Present. Role: development of automated contest grading services. Collaboration with Amazon Future Engineer

PEER-REVIEWED PUBLICATIONS

Smith, J.B., and Pardo, B. (accepted for publication, 2026). “Shifting Time Scales: Supporting Live Gesture-Controlled Generative Music with Speculative Execution.” In Proceedings of the 26th International Conference on New Interfaces for Musical Expression

Chu, A., **Smith, J.B.,** & Pardo, B. (accepted for publication, 2026). “FXplorer: A Map-Based Interface for Exploratory Audio Effects Design.” In Proceedings of the 26th International Conference on New Interfaces for Musical Expression

Smith, J. B., Chu, A., Alben, N., Ding, S., Gautier, K., Garrett, S., ... & McKlin, T. (2025, October). “Using Co-Design to Investigate Affordances of an Expressive CS Learning Environment for Students who are BVI.” In Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility (pp. 1-7).

Barnett, J., O'Reilly, P., **Smith, J. B.,** Chu, A., & Pardo, B. (2025). “Ethics Statements in AI Music Papers: The Effective and the Ineffective.” In *AI for Music Workshop at NeurIPS 2025*.

Smith, J.B., and Freeman, J. (2025). "Adaptation and Perceived Creative Autonomy in Gesture-Controlled Interactive Music." In Proceedings of the 25th International Conference on New Interfaces for Musical Expression

Ding, S., **Smith, J. B.,** & Magerko, B. (2025). “Considering Large Language Models Integrations in Expressive Computer Science Learning Environments for Blind and Visually Impaired Learners through Co-design.” In Proceedings of the 26th International Conference on Artificial Intelligence in Education

Ding, S., **Smith, J. B.**, Garrett, S., & Magerko, B. (2024). “Redesigning EarSketch for Inclusive CS Education: A Participatory Design Approach.” In Proceedings of the 23rd Annual ACM Interaction Design and Children Conference

Garrett, S., **Smith, J. B.**, Blue, A., Ondin Z., Rempel, J., Mumma, K., Freeman, J., and Magerko, B. (2024). “Improving the Accessibility of the EarSketch Web-Based Audio Application for Blind and Visually Impaired Learners.” In Proceedings of the International Web Audio Conference

Rahimi, S., **Smith, J.B.,** Truesdell, E.J.K.**,** Vinay, A., Boyer, K.E., Magerko, B., Freeman, J., and McKlin, T. (2023). “Validity and Fairness of an Automated Assessment of Creativity in Computational Music Remixing.” Workshop on Automated Assessment and Guidance of Project Work at the 24th International Conference on Artificial Intelligence in Education

Smith, Jason, and Freeman, Jason (2023). “Effects of Visual Explanation on Perceived Creative Autonomy in an AI-Based Generative Music System.” In IUI '23 Companion: Companion Proceedings of the 28th International Conference on Intelligent User Interfaces

Smith, J. B., Vinay, A., & Freeman, J. (2023). “The Impact of Salient Musical Features in a Hybrid Recommendation System for a Sound Library.” In the 3rd Workshop on Intelligent Music Interfaces for Listening and Creation (MILC) as part of the 28th International Conference on Intelligent User Interfaces

Smith, Jason and Freeman, Jason (2022). “Human-AI Partnerships in Generative Music.” In the 21st International Conference on New Interfaces for Musical Expression

Goloujeh, Atefeh Mahdavi, **Jason Smith,** and Brian Magerko (2022). "Explainable CLIP-Guided 3D-Scene Generation in an AI Holodeck." In the 18th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment

Smith, Jason, et al. (2021). "Towards an AI Holodeck: Generating Virtual Scenes from Sparse Natural Language Input." In the Explainable AI in Games Workshop at the 17th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment

Smith, Jason, and Freeman, Jason (2021). "Effects of deep neural networks on the perceived creative autonomy of a generative musical system." In Proceedings of the 17th AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment

Moore, Roxanne, et al. (2021). "Engaging High School Students in Computer Science Through Music Remixing: An EarSketch-based Pilot Competition and Evaluation." ASEE Virtual Annual Conference Content Access

Truesdell, Erin JK, et al. (2021). "Supporting Computational Music Remixing with a Co-Creative Learning Companion." In Proceedings of the 2021 International Conference on Computational Creativity

Smith, J., Truesdell, E., Freeman, J., Magerko, B., Boyer, K. E., & McKlin, T. (2020). “Modeling Music and Code Knowledge to Support a Co-Creative AI Agent for Education.” In Proceedings of the 21st International Society for Music Information Retrieval

Smith, J., Jacob, M., Freeman, J., Magerko, B., & Mcklin, T. (2019). “Combining Collaborative and Content Filtering in a Recommendation System for a Web-based DAW.” In Proceedings of the 5th International Web Audio Conference

Smith, J., Weeks, D., Jacob, M., Freeman, J., & Magerko, B. (2019). “Towards a hybrid recommendation system for a sound library.” In the 1st Workshop on Intelligent Music Interfaces for Listening and Creation (MILC) as part of the 28th International Conference on Intelligent User Interfaces

Savery, Richard, et al. (2019). "Learning from History: Recreating and Repurposing Sister Harriet Padberg's Computer Composed Canon and Free Fugue." In Proceedings of the 19th International Conference on New Interfaces for Musical Expression

PERFORMANCES

AI-Based Generative Music System, Guthman Musical Instrument Competition Technology Fair, Atlanta, GA, 2022-2024

How Far is Too Far? | The Age of A.I. - https://www.youtube.com/watch?v=UwsrzCVZAb8

Powered by TensorFlow: Creating a custom, machine learning-powered drumming arm - https://www.youtube.com/watch?v=4O-rqn3BD7I

SERVICE

26th International Conferences on New Interfaces for Musical Expression (NIME 2026), London, UK – Meta-Reviewer, Reviewer

ACM Conference on Human Factors in Computing Systems (CHI 2026), Barcelona, Spain - Reviewer

International Journal of Human-Computer Interaction (2025) - Reviewer

1st Workshop on Gesture and Generative AI in NIME Design as part of the 25th International Conference on New Interfaces for Musical Expression (NIME 2025), Canberra, Australia - Organizer

25th International Conferences on New Interfaces for Musical Expression (NIME 2025), Canberra, Australia – Meta-Reviewer

24th International Conferences on New Interfaces for Musical Expression (NIME 2024), Online and Utrecht, NL – Reviewer

3rd Workshop on Intelligent Music Interfaces for Listening and Creation (MILC) as part of the 28th International Conference on Intelligent User Interfaces (IUI 2023), Sydney, Australia - Organizer, Reviewer

3rd Conference on AI Music Creativity (AIMC 2022), Online - Reviewer

ACM Conference on Human Factors in Computing Systems (CHI 2021), Yokohama, Japan – Reviewer

PLOS ONE Journal (2021) - Reviewer