Patrick J. Donnelly

Associate Professor of Computer Science • School of Electrical Engineering and Computer Science
Oregon State University–Cascades, Bend, Oregon
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EDUCATION

2015 **Ph.D., Computer Science**, Montana State University, Bozeman, MT

2008 **M.S.E., Computer Science**, Johns Hopkins University, Baltimore, MD

2008 **M.M., Computer Music Research & Technology**, Peabody Conservatory of the Johns Hopkins University, Baltimore, MD

2008 **M.M., Musicology**, Peabody Conservatory of the Johns Hopkins University, Baltimore, MD

2004 **B.S., Computer Science** (*cum laude*), Washington University in St. Louis, MO

2004 **A.B., Music History and Italian**, Washington University in St. Louis, MO

PROFESSIONAL EXPERIENCE

2026– **Associate Professor**, Oregon State University–Cascades, Bend, OR

2019–2026 **Assistant Professor**, Oregon State University–Cascades, Bend, OR

2017–2019 **Assistant Professor**, California State University, Chico, CA

2015–2017 **Postdoctoral Researcher**, University of Notre Dame, Notre Dame, IN

2011–2015 **Adjunct Instructor; Lecturer**, Montana State University, Bozeman, MT

2011 **Research Assistant**, Montana State University, Bozeman, MT

2010–2011 **Teaching Assistant**, Montana State University, Bozeman, MT

2011–2012 **Teaching Assistant** (online), Johns Hopkins University, Baltimore, MD

2008–2009 **Teaching Assistant**, Johns Hopkins University, Baltimore, MD

2006–2010 **Research Assistant**, Sound and Music Perception Laboratory, Department of Otolaryngology, Johns Hopkins Medical Institute, Baltimore, MD

2005–2008 **Teaching Assistant; Graduate Assistant**, Peabody Conservatory of the Johns Hopkins University, Baltimore, MD

2002–2005 **Embedded Systems Programmer** (ASM, BASIC, C), Control MicroSystems, Fenton, MO

HONORS AND AWARDS

2022 **Austin-Paul Engineering Faculty Award**, College of Engineering, Oregon State University. Recognizes faculty who lead, encourage, and stimulate students in the pursuit of creative and innovative engineering ideas.

2016 **Outstanding Paper Award** and Best Paper finalist, UMAP 2016. Automatic teacher modeling from live classroom audio.

2015 **Professor of the Year** (voted by CS students), Montana State University

2015 **Finalist**, Three Minute Thesis Competition, Montana State University

2013 **Runner-up, Best Student Paper Award**, IEEE AUTOTESTCON 2013. Implementing AI-ESTATE with prognostic extensions in Java.

2011 **Teaching Assistant of the Year** (voted by CS faculty), Montana State University

EXTERNAL FUNDING

2023–2025 **Smart compost bin for measuring home food waste**
Foundation for Food & Agriculture Research (FFAR 22-000420), co-funded by The Kroger Co. Zero Hunger | Zero Waste Foundation
PIs: **Donnelly** (lead), J. Clark, Q. Clark (all OSU)

2021–2023 **Patient nutritional intake monitoring**
Central Oregon Health Quality Alliance
PIs: Montgomery (lead), **Donnelly**, Webb (all OSU)

2017–2021 **EXP: Collaborative Research: Cyber-enabled teacher discourse analytics to empower teacher learning**
National Science Foundation, IIS-1735740 (Chico State, 2017–2019), transferred to Oregon State as IIS-2002875 (2019–2021). Collaborative with IIS-1735793 (Colorado) and IIS-1735785 (Pittsburgh)
PIs: D'Mello (lead, CU Boulder), Kelly (Pitt), **Donnelly** (Chico State, then OSU)

Prior Support

2015–2017 Postdoctoral Researcher on *Automating the Measurement and Assessment of Classroom Discourse*, Institute of Education Sciences (IES R305A130030), University of Notre Dame

PUBLICATIONS

Student advisees are marked * (graduate) and † (undergraduate). Acceptance rates (AR) and impact factors (IF) are given where known.

Conference Papers

2026 C36 Aamir*, J. and **Donnelly, P. J.** Addressing dataset scarcity in music emotion recognition with LLMs. In Machado, P., Romero, J. J., and Rebelo, S. M., editors, *Proceedings on the International Conference on Computational Intelligence in Music, Sound, Art and Design (EvoMUSART 2026)*, volume 16523, pages 3–20. Springer, 2026, doi:10.1007/978-3-032-24350-8_1

C35 Kwan*, D. and **Donnelly, P. J.** Probing for advanced music theory concepts in generative music models. In Machado, P., Romero, J. J., and Rebelo, S. M., editors, *Proceedings on the International Conference on Computational Intelligence in Music, Sound, Art and Design (EvoMUSART 2026)*, volume 16523, pages 252–270. Springer, 2026, doi:10.1007/978-3-032-24350-8_17

C34 McCabe*, P. and **Donnelly, P. J.** Classifying audio timbre without audio using text-only training. In Machado, P., Romero, J. J., and Rebelo, S. M., editors, *Proceedings on the International Conference on Computational Intelligence in Music, Sound, Art and Design (EvoMUSART 2026)*, volume 16523, pages 347–366. Springer, 2026, doi:10.1007/978-3-032-24350-8_23

C33 Tassin*, I. and **Donnelly, P. J.** Toward better machine understanding of rhythm: Rhythmicness as a regression problem. In Ahram, T. and Casas, A. M., editors, *Human Interaction & Emerging Technologies: Artificial Intelligence & Future Applications (IHIET-AI 2026)*, volume 201 of *AHFE Open Access*. AHFE International, April 2026, doi:10.54941/ahfe1007220

2025 C32 Khanal*, P. and **Donnelly, P. J.** Emotionotes dataset: Decoding emotions in classical music through concert program notes. In Machado, P., Johnson, C., and Santos, I., editors, *Proceedings of the 14th International Conference of Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2025)*, volume 15611, pages 339–356. Springer, 2025, doi:10.1007/978-3-031-90167-6_23

2024 C31 Beery*, A. J., Eastman†, D. W., Enos†, J., Richards†, W., and **Donnelly, P. J.** Smart compost bin for measurement of consumer food waste. In *Companion Proceedings of the 26th International Conference on Multimodal Interaction (ICMI 2024)*, page 100–107, New York, NY, USA, 2024. Association for Computing Machinery, doi:10.1145/3686215.3686216

C30 Gaur†, S. and **Donnelly, P. J.** Generating smooth mood-dynamic playlists with audio features and

KNN. In Johnson, C., Rebelo, S. M., and Santos, I., editors, *Proceedings of the 13th International Conference of Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2024)*, volume 14633, pages 162–178. Springer, 2024, doi:10.1007/978-3-031-56992-0_11

C29 Carlson†, P. and **Donnelly, P. J.** Deep learning approaches for sung vowel classification. In Johnson, C., Rebelo, S. M., and Santos, I., editors, *Proceedings of the 13th International Conference of Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2024)*, volume 14633, pages 67–83. Springer, 2024, doi:10.1007/978-3-031-56992-0_5

2023 C28 **Donnelly, P. J.** and Carlson†, P. Transposition of simple waveforms from raw audio with deep learning. In Johnson, C., Rodríguez-Fernández, N., and Rebelo, S. M., editors, *Proceedings of the 12th International Conference of Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2023)*, volume 13988, pages 341–356. Lecture Notes in Computer Science, Springer, 2023, doi:10.1007/978-3-031-29956-8_22

2022 C27 **Donnelly, P. J.** and Beery†, A. Evaluating large-language models for dimensional music emotion prediction from social media discourse. In Abbas, M. and Freihat, A. A., editors, *Proceedings of the 5th International Conference on Natural Language and Speech Processing (ICNLSP 2022)*, pages 242–250. Association for Computational Linguistics, December 2022

C26 **Donnelly, P. J.** Concatenative phonetic synthesis for the Proto-Indo-European language. In Abbas, M. and Freihat, A. A., editors, *Proceedings of the 5th International Conference on Natural Language and Speech Processing (ICNLSP 2022)*, pages 193–201. Association for Computational Linguistics, December 2022

C25 **Donnelly, P. J.**, De Leon*, D., and Mellinger, D. K. Detecting ultrasonic harbor porpoise clicks with heterodyning and Teager–Kaiser Energy Operator. In *Proceedings of the 7th International Conference on Frontiers of Signal Processing (ICFSP 2022)*, pages 142–146. IEEE, 2022, doi:10.1109/ICFSP55781.2022.9924846

C24 **Donnelly, P. J.** and Junkins†, O. Short-term river forecasting with a stacked ensemble of tributary models. In *Proceedings of the 7th International Conference on Frontiers of Signal Processing (ICFSP 2022)*, pages 189–193. IEEE, 2022, doi:10.1109/ICFSP55781.2022.9924877

C23 **Donnelly, P. J.** and Ebert†, V. Transcription of audio to MIDI using deep learning. In *Proceedings of the 7th International Conference on Frontiers of Signal Processing (ICFSP 2022)*, pages 130–135. IEEE, 2022, doi:10.1109/ICFSP55781.2022.9924773

C22 **Donnelly, P. J.** and Prestwich†, A. Identifying sentiment from crowd audio. In *Proceedings of the 7th International Conference on Frontiers of Signal Processing (ICFSP 2022)*, pages 64–69. IEEE, 2022, doi:10.1109/ICFSP55781.2022.9924797

C21 **Donnelly, P. J.** and Gaur†, S. Mood dynamic playlist: Interpolating a musical path between emotions using a KNN algorithm. In Ahram, T. and Taiar, R., editors, *Human Interaction & Emerging Technologies: Artificial Intelligence & Future Applications (IHIET-AI 2022)*, volume 23 of *AHFE Open Access*. AHFE International, April 2022, doi:10.54941/ahfe100894

2020 C20 Jensen, E., Dale, M., **Donnelly, P. J.**, Stone, C., Kelly, S., Godley, A., and D'Mello, S. K. Toward automated feedback on teacher discourse to enhance teacher learning. In *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems (CHI 2020)*, pages 1–13, 2020, doi:10.1145/3313831.3376418. Long paper; AR=24%

2019 C19 Stone, C., **Donnelly, P. J.**, Dale, M., Capello, S., Kelly, S., Godley, A., and D'Mello, S. K. Utterance-level modeling of indicators of engaging classroom discourse. In Lynch, C., Merceron, A., Desmarais, M., and Nkambou, R., editors, *Proceedings of the 12th International Conference on Educational Data Mining (EDM 2019)*, pages 420–425. International Educational Data Mining Society, July 2019. Short paper

2017 C18 Stewart, A., Bosch, N., Chen, H., **Donnelly, P. J.**, and D'Mello, S. K. Face forward: Detecting mind wandering from video during narrative film comprehension. In André, E., Baker, R., Hu, X., Rodrigo, M., and du Boulay, B., editors, *Proceedings of the 18th International Conference on Artificial Intelligence in Education (AIED 2017)*, pages 359–370. Springer: Verlag, 2017, doi:10.1007/978-3-319-61425-0_30. Full paper; AR=30%

C17 Olney, A. M., **Donnelly, P. J.**, Samei, B., and D'Mello, S. K. Assessing the dialogic properties of classroom discourse: Proportion models for imbalanced classes. In Hu, X., Barnes, T., Hershkovitz, A.,

and Paquette, L., editors, *Proceedings of the 10th International Conference on Educational Data Mining (EDM 2017)*. International Educational Data Mining Society, June 2017. Short paper; AR=42%

C16 **Donnelly, P. J.**, Blanchard, N., Olney, A. M., Kelly, S., Nystrand, M., and D'Mello, S. K. Words matter: Automatic detection of teacher questions in live classroom discourse using linguistics, acoustics, and context. In Molenaar, I., Ochoa, X., and Dawson, S., editors, *Proceedings of the 7th International Learning Analytics and Knowledge Conference (LAK 2017)*, pages 218–227. ACM: New York, NY, 2017, doi:10.1145/3027385.3027417. Long paper; AR=32%

2016 C15 **Donnelly, P. J.**, Blanchard, N., Samei, B., Olney, A. M., Sun, X., Ward, B., Kelly, S., Nystrand, M., and D'Mello, S. K. Multi-sensor modeling of teacher instructional segments in live classrooms. In *Proceedings of the 18th ACM International Conference on Multimodal Interaction (ICMI 2016)*, pages 177–184. ACM: New York, NY, 2016, doi:10.1145/2993148.2993158. Long paper; AR=38%

C14 Blanchard, N., **Donnelly, P. J.**, Olney, A., Samei, B., Ward, B., Sun, X., Kelly, S., Nystrand, M., and D'Mello, S. K. Identifying teacher questions using automatic speech recognition in classrooms. In *Proceedings of the 17th Annual SIGdial Meeting on Discourse and Dialogue (SIGDIAL 2016)*, pages 191–201. Association for Computational Linguistics, September 2016, doi:10.18653/v1/W16-3623

C13 **Donnelly, P. J.**, Blanchard, N., Samei, B., Olney, A. M., Sun, X., Ward, B., Kelly, S., Nystrand, M., and D'Mello, S. K. Automatic teacher modeling from live classroom audio. In Aroyo, L., D'Mello, S., Vassileva, J., and Blustein, J., editors, *Proceedings of the 24th ACM International Conference on User Modeling, Adaptation, and Personalization (UMAP 2016)*, pages 45–53. ACM: New York, NY, 2016, doi:10.1145/2930238.2930250. Long paper; AR=24%

C12 Stewart, A., Bosch, N., Chen, H., **Donnelly, P. J.**, and D'Mello, S. K. Where's your mind at? Video-based mind wandering detection during film viewing. In Aroyo, L., D'Mello, S. K., Vassileva, J., and Blustein, J., editors, *Proceedings of the 24th ACM International Conference on User Modeling, Adaptation, and Personalization (UMAP 2016)*, pages 295–296. ACM: New York, NY, 2016, doi:10.1145/2930238.2930266. Extended abstract; AR=41%

C11 Hutt, S., Mills, C., White, S., **Donnelly, P. J.**, and D'Mello, S. K. The eyes have it: Gaze-based detection of mind wandering during learning with an intelligent tutoring system. In Barnes, T., Chi, M., and Feng, M., editors, *Proceedings of the 9th International Conference on Educational Data Mining (EDM 2016)*, pages 86–93. International Educational Data Mining Society, June 2016. Exemplary full paper; AR=15%

C10 Blanchard, N., **Donnelly, P. J.**, Olney, A. M., Samei, B., Ward, B., Sun, X., Kelly, S., Nystrand, M., and D'Mello, S. K. Semi-automatic detection of teacher questions from human-transcripts of audio in live classrooms. In Barnes, T., Chi, M., and Feng, M., editors, *Proceedings of the 9th International Conference on Educational Data Mining (EDM 2016)*, pages 288–291. International Educational Data Mining Society, June 2016. Short paper; AR=52%

2015 C9 **Donnelly, P. J.** and Sheppard, J. W. Cross-dataset validation of feature sets in musical instrument classification. In *2015 IEEE International Conference on Data Mining (ICDM) Workshop on Big Media Data: Understanding, Search, and Mining*, pages 94–101. IEEE, 2015, doi:10.1109/ICDMW.2015.213. AR=47%

2014 C8 **Donnelly, P. J.** and Sheppard, J. Clustering spectral filters for extensible feature extraction in musical instrument classification. In Eberle, W. and Boonthum-Denecke, C., editors, *Proceedings of the 27th International Florida Artificial Intelligence Research Society Conference (FLAIRS 2014)*, pages 37–42. AAAI Press: Menlo Park, CA, May 2014. Long paper; AR=48%

2013 C7 Sturlaugson, L., Fortier, N., **Donnelly, P. J.**, and Sheppard, J. W. Implementing AI-ESTATE with prognostic extensions in Java. In *2013 IEEE AUTOTESTCON*, pages 1–8. IEEE, 2013, doi:10.1109/AUTEST.2013.6645086. Runner-up Best Student Paper

C6 Riddle, T., **Donnelly, P. J.**, Cairns, D. S., and Nelson, J. Use of statistical learning in a reliability program for risk assessment of composite structures with defects. In *54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, page 1686. American Institute of Aeronautics and Astronautics, 2013, doi:10.2514/6.2013-1686

2012 C5 **Donnelly, P. J.**, Sturlaugson, L. E., and Sheppard, J. W. A standards-based approach to gray-scale health assessment using fuzzy fault trees. In *2012 IEEE AUTOTESTCON*, pages 174–181. IEEE, 2012, doi:10.1109/AUTEST.2012.6334529

2011 C4 **Donnelly, P. J.** and Sheppard, J. Evolving four-part harmony using genetic algorithms. In *Proceedings of the 9th European Conference of Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2011)*, pages 273–282. Springer, April 2011, doi:10.1007/978-3-642-20520-0_28

2010 C3 Sheppard, J. W., Butcher, S. G., and **Donnelly, P. J.** Demonstrating semantic interoperability of diagnostic reasoners via AI-ESTATE. In *2010 IEEE Aerospace Conference*, pages 1–10. IEEE, 2010, doi:10.1109/AERO.2010.5446837

2009 C2 Sheppard, J. W., Butcher, S. G., and **Donnelly, P. J.** Standard diagnostic services for the ATS framework. In *2009 IEEE AUTOTESTCON*, pages 393–400. IEEE, 2009, doi:10.1109/AUTEST.2009.5314012

C1 Sheppard, J. W., Butcher, S. G., **Donnelly, P. J.**, and Mitchell, B. R. Demonstrating semantic interoperability of diagnostic models via AI-ESTATE. In *2009 IEEE Aerospace Conference*, pages 1–13. IEEE, 2009, doi:10.1109/AERO.2009.4839685

Journal Articles

2026 J7 Beery[*], A. and **Donnelly, P. J.** Towards automatic household food waste measurement with the smart compost bin. *Discover Sustainability*, October 2026, doi:10.1007/s43621-026-04774-6

2025 J6 Clark, Q. M., Kanavikar, D. B., Clark, J., and **Donnelly, P. J.** Exploring the potential of AI-driven food waste management strategies used in the hospitality industry for application in household settings. *Frontiers in Artificial Intelligence*, 7(1429477):1–14, 2025, doi:10.3389/frai.2024.1429477. (IF = 4.7)

2022 J5 Dale, M. E., Godley, A. J., Capello, S. A., **Donnelly, P. J.**, D'Mello, S. K., and Kelly, S. P. Toward the automated analysis of teacher talk in secondary ELA classrooms. *Teaching and Teacher Education*, 110:103584, 2022, doi:10.1016/j.tate.2021.103584. (IF = 3.27)

2018 J4 Kelly, S., Olney, A. M., Donnelly, P., Nystrand, M., and D'Mello, S. K. Automatically measuring question authenticity in real-world classrooms. *Educational Researcher*, 47(7):451–464, 2018, doi:10.3102/0013189X18785613

2013 J3 **Donnelly, P. J.** and Sheppard, J. W. Classification of musical timbre using Bayesian networks. *Computer Music Journal*, 37(4):70–86, 2013, doi:10.1162/COMJ_a_00210

2010 J2 Kim, I., Yang, E., **Donnelly, P. J.**, and Limb, C. J. Preservation of rhythmic clocking in cochlear implant users: a study of isochronous versus anisochronous beat detection. *Trends in amplification*, 14(3):164–169, 2010, doi:10.1177/1084713810387937

2009 J1 **Donnelly, P. J.**, Guo, B. Z., and Limb, C. J. Perceptual fusion of polyphonic pitch in cochlear implant users. *The Journal of the Acoustical Society of America*, 126(5):EL128–EL133, 2009, doi:10.1121/1.3239464

Book Chapters

2024 B4 Beery[†], A. and **Donnelly, P. J.** Learning affective responses to music from social media discourse. In Abbas, M., editor, *Practical Solutions for Diverse Real-World NLP Applications*, Signals and Communication Technology, pages 93–119. Springer, 2024

2017 B3 Olney, A. M., Kelly, S., Samei, B., **Donnelly, P. J.**, and D'Mello, S. K. Assessing teacher questions in classrooms. In Sottilare, R., Graesser, A., Hu, X., and Goodwin, G., editors, *Design recommendations for intelligent tutoring systems: Assessment*, volume 5, pages 261–274. US Army Research Laboratory: Orlando, FL, 2017

2009 B2 **Donnelly, P. J.** and Limb, C. J. Music perception in cochlear implant users. In Niparko, J. K., editor, *Cochlear implants: Principles and practices*, page 223. Lippincott Williams & Wilkins, Philadelphia, PA, 2nd edition, 2009

B1 Limb, C. J. and **Donnelly, P. J.** Music. In Squire, L. R., editor, *Encyclopedia of Neuroscience*, pages 1151–1158. Elsevier, 2009

Theses and Dissertations

2015 T4 **Donnelly, P. J.** *Learning spectral filters for single- and multi-label classification of musical instruments.* Ph.D. Dissertation, Computer Science, Montana State University.

2008 T3 **Donnelly, P. J.** *Computer music research portfolio: Music cognition and machine learning music.* M.M. Thesis, Computer Music, Peabody Conservatory, Johns Hopkins University.

T2 **Donnelly, P. J.** *The battle for the Battle of Vittoria.* M.M. Thesis, Musicology, Peabody Conservatory, Johns Hopkins University.

2004 T1 **Donnelly, P. J.** *Verdi: The music of the Italian Risorgimento.* A.B. Thesis, Music, Washington University in St. Louis.

INVITED TALKS

2026 *Can we teach AI to feel music?* Research talk, Oregon State University–Cascades, Bend, OR (October 28)

2020 *Engaging students in remote and hybrid teaching.* OSU-Cascades Advisory Board, Bend, OR (October 6)

2019 *Classification of musical instruments.* Computer Science Colloquium, California State University, Chico, CA (April 5)

2007 *Beethoven's deafness* (with C. J. Limb). Luncheon keynote, Convention of the Audio Engineering Society, New York, NY

TEACHING

Oregon State University (2019–*present*)

Term	Course	Name	Cr.	Campus
W26	CS 340	Databases	4	Cascades
W26	CS 434	Machine Learning	4	Cascades
F25	CS 271	Architecture	4	Cascades
F25	CS 331	Artificial Intelligence	4	Cascades
W25	CS 340	Databases	4	Cascades
W25	CS 381	Prog. Languages	4	Cascades
F24	CS 271	Architecture	4	Cascades
F24	CS 434	Machine Learning	4	Cascades
W24	CS 381	Prog. Languages	4	Cascades
F23	CS 271	Architecture	4	Cascades
F23	CS 434	Machine Learning	4	Cascades
S23	CS 325	Algorithms	4	Cascades
W23	CS 340	Databases	4	Cascades
F22	CS 271	Architecture	4	Cascades
F22	CS 434	Machine Learning	4	Cascades
S22	CS 340	Databases	4	Cascades
S22	CS 381	Prog. Languages	4	Cascades
S22	CS 434	Machine Learning	4	Cascades
W22	CS 493	Cloud App Dev.	4	Cascades
W22	CS 325	Algorithms	4	Cascades
F21	CS 271	Architecture	4	Cascades
S21	CS 434	Machine Learning	4	Cascades
S21	CS 381	Prog. Languages	4	Ecampus
S21	CS 381	Prog. Languages	4	Cascades
W21	CS 462	Capstone II	3	Cascades
W21	CS 325	Algorithms	4	Cascades
F20	CS 271	Architecture	4	Cascades
U20	CS 381	Prog. Languages	4	Corvallis
S20	CS 434	Machine Learning	4	Cascades
S20	CS 381	Prog. Languages	4	Cascades
W20	CS 271	Architecture	4	Cascades
F19	CS 325	Algorithms	4	Cascades

California State University, Chico (2017–2019)

Term	Course	Name	Cr.
S19	CSCI 211	Prog. & Algorithms II	4
S19	CSCI 315	Prog. Languages	4
S19	CSCI 580	Artificial Intelligence	4
F18	CSCI 211	Prog. & Algorithms II	4
F18	CSCI 580	Artificial Intelligence	4
F18	CSCI 490	CS Capstone	3
S18	CSCI 211	Prog. & Algorithms II	4
S18	CSCI 315	Prog. Languages	3
F17	CSCI 490	CS Capstone	4
F17	CSCI 211	Prog. & Algorithms II	4
S17	CSCI 111	Prog. & Algorithms I	4

Montana State University (2011–2015)

Term	Course	Name	Cr.
U15	CSCI 132	Data Structures	4
S15	CSCI 305	Progr. Languages	3
S15	CSCI 112	Progr. with C	3
F14	CSCI 361	Comp. Architecture	3
F14	CSCI 440	Database Systems	3
F14	MUST 341	Sound Synthesis	3
S14	CSCI 305	Progr. Languages	3
F13	MUST 341	Sound Synthesis	3
S13	CSCI 305	Progr. Languages	3
S13	MUSI 301	Music History I	3
F12	CSCI 361	Comp. Architecture	3
F12	MUSI 302	Music History II	3
F12	MUST 341	Sound Synthesis	3
S12	MUST 350	R/T Computer Music	3
F11	MUST 341	Sound Synthesis	3

Course Development (New Courses)

2020 Fundamentals of Programming Languages (CS 381), OSU Ecampus

2018 Artificial Intelligence (CS 580), California State University, Chico

THESES SUPERVISED

M.S. Thesis

2026 Peter McCabe. *Audio-free timbre classification with text-only training*

2026 Shaun Leib. *Time is not on your side: Assessing the value of dynamic audio features for static music emotion labels*

2022 Daniel De Leon. *Automatic classification of ultrasonic harbor porpoise clicks in a varying noise environment*

M.S. Project

2025 Aidan Beery. *Towards automatic household food waste measurement with the smart compost bin*

2025 Austin Martin. *Machine learning-based real-time canine seizure detection using a smart collar*

2025 Shengxuan Wang. *Comparative analysis of sentiment in Chinese opera with different features*

B.S. Honors Thesis

2025 Shaun Leib. *Interpreting emotion from sound: A comparison of features and models for music emotion classification*

2023 John Knowlton. *Synthetic instrument generation: Generating novel instrument timbres with a genetic algorithm*

2023 Shaurya Gaur. *Mood-dynamic playlist: Interpolating a path of emotions using a KNN algorithm*

2023 Anju Mathew. *Improving the accuracy and efficiency of bird song analysis with machine learning based event detection*

2022 Aidan Beery. *Predicting music emotion with social media discourse*

2022 Victoria Ebert. *Transcribing solo piano performances from audio to MIDI using a neural network*

PROFESSIONAL SERVICE

Conference Organization

2027 **Conference Chair**, EvoMUSART 2027: 16th International Conference on Artificial Intelligence in Music, Sound, Art and Design (part of EvoStar), Mainz, Germany

2026 **Program Committee**, EvoMUSART 2026

Editorial

2022 **Guest Editor**, *Algorithms* (MDPI), special issue "Machine Understanding of Music and Sound"

Reviewer, Journals

2025, 2026 *Expert Systems with Applications* (Elsevier)

2022 *Computer Music Journal* (MIT Press)

2015, 2017 *IEEE Transactions on Affective Computing*

2016 *IEEE Access*

Reviewer, Conferences

2026 International Society for Music Information Retrieval Conference (ISMIR)

2026 IEEE International Symposium on Mixed and Augmented Reality (ISMAR)

2022 International Conference on Educational Data Mining (EDM)

2016 ACM International Conference on Multimodal Interaction (ICMI)

2015 AAAI Conference on Artificial Intelligence

2015 ACM Conference on Intelligent User Interfaces (IUI)

2011 IEEE AUTOTESTCON

Service to the Public

2020 Grader, AP Computer Science A exam