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EDUCATION

4/05   Ph.D., Computer Science and Engineering
The University of Michigan, Ann Arbor, MI, USA

12/01   M. Mus., Jazz and Improvisation
The University of Michigan, Ann Arbor, MI, USA

12/93   M.S., Computer Science
The Ohio State University, Columbus, OH, USA

6/90   B.Mus., Jazz Composition
The Ohio State University, Columbus, OH, USA

PROFESSIONAL EMPLOYMENT

9/10 – now   Associate Professor
Department of Electrical Engineering and Computer Science
Department of Music Theory and Cognition
Northwestern University, Evanston, IL

9/04 – 8/10 Assistant Professor
Department of Electrical Engineering and Computer Science
Department of Music Theory and Cognition
Northwestern University, Evanston, IL

1/03 – 5/04 Adjunct Professor
Department of Music
Madonna University, Livonia, MI

5/96 – 8/98 Systems Developer
Department of Speech and Hearing Science
Ohio State University, Columbus, OH

1/94 – 4/96 Software Engineer
SPSS Inc., Chicago, IL

RESEARCH FUNDING

Title	Funding Source	Amount	Dates	Role
CHS: Small: Robust Interactive Audio Source Separation	**NSF CHS**	$498,736	10/14-9/17	PI
HCC: Small: Building Audio Interfaces with Crowdsourced Concept Maps and Active Transfer Learning	**NSF IIS**	$499,804	9/11 – 8/15	PI
Making Music Documents Accessible in Musical Terms	**NSF CAREER**	$506,669	1/07 – 12/12	PI
Personalized Tools to Enhance Musical Creativity	**NSF Creative IT**	$166,000	6/08 – 5/12	PI

| Bootstrapping Adaptive Personalized Music Search with Game-based Collaborative Tagging | **NSF IIS** | $476,171 | 9/08 – 8/12 | PI |

PUBLICATIONS

PATENTS

Mark Cartwright, Bryan Pardo, "Systems, Methods, and Apparatus to Search Audio Synthesizers using Vocal Imitation," Patent Pending

Bryan Pardo, Alexander Madjar, David Little, Darren Gergle, "Systems, Methods, and Apparatus for Equalization Preference Learning," Patent Pending

Zafar Rafii, Bryan Pardo, "Acoustic Separation System and Method, " Patent Pending

Andrew Todd Sabin, Bryan Pardo, "Systems, Methods, and Apparatus for Equalization Preference Learning," U.S. Patent No. 8,565,908

REFEREED JOURNALS

1. F. J. Rodriguez-Serrano, Z. Duan, P. Vera-Candeas, **B. Pardo**, J. Carabias-Orti, "Online score-informed source separation with adaptive instrument models*," Journal of New Music Research*, In Press, DOI 10.1080/09298215.2014.989174

2. Z. Rafii, Z. Duan, **B. Pardo**, "Combining Rhythm-based and Pitch-based Methods for Background and Melody Separation," *IEEE Transactions on Audio, Speech and Language Processing,* pp. 1884-1893, vol. 22(12), 2014, DOI: 10.1109/TASLP.2014.2354242,

3. A. Liutkus, D. Fitzgerald, Z.Rafii, **B. Pardo**, L. Daudet, "Kernel additive models for source separation," *IEEE Transactions on Signal Processing*, pp. 4298-4310, vol. 62(16), 2014, DOI: 10.1109/TSP.2014.2332434

4. S. Ewert, **B. Pardo**, M. Muller, and M. Plumbley, "Score-Informed Source Separation for Musical Audio Recordings: An overview," *IEEE Signal Processing Magazine – Special Issue on Source Separation and Applications*, pp. 116-124, vol. 31(3), May 2014, DOI 10.1109/MSP.2013.2296076

5. Z. Duan, J. Han, **B. Pardo**, "Multi Pitch Streaming of Harmonic Sound Mixtures," *IEEE Transactions on Audio, Speech and Language Processing*, pp. 138-150, vol. 22(1), 2014

6. Z. Rafii, **B. Pardo**, "REpeating Pattern Extraction Technique (REPET): A Simple Method for Music/Voice Separation," *IEEE Transactions on Audio, Speech and Language Processing*, pp. 71-82, vol. 21(1), 2013, DOI: 10.1109/TASL.2012.2213249

7. Z. Duan, **B. Pardo**, "Soundprism: An Online System for Score-informed Source Separation of Music Audio," *Journal of Selected Topics in Signal Processing*, pp. 1205-1215, vol. 5(6), 2011

8. A. Sabin, Z. Rafii, **B. Pardo**, "Weighting function-based rapid mapping of descriptors to audio processing parameters," *Journal of the Audio Engineering Society,* pp. 419-430, vol. 59(6), 2011

9. Z. Duan, **B. Pardo** and C. Zhang, "Multiple Fundamental Frequency Estimation by Modeling Spectral Peaks and Non-peak Areas," *IEEE Transactions on Audio, Speech and Language Processing*, vol. 18(8), pp. 2121 – 2133, 2010, DOI: 10.1109/TASL.2010.2042119

10. J. Woodruff and **B. Pardo**, "Using Pitch, Amplitude Modulation and Spatial Cues for Separation of Harmonic Instruments from Stereo Music Recordings," *EURASIP Journal on Advances in Signal Processing,* vol. 2007, Article ID 86369, 2007

11. R. Dannenberg, W. Birmingham, **B. Pardo**, N. Hu, C. Meek, G. Tzanetakis, "A Comparative Evaluation of Search Techniques for Query-by-Humming Using the MUSART Testbed," *Journal of the American Society for Information Science and Technology*, vol. 58 (3), 2007

12. **B. Pardo**, "Music Information Retrieval," *Communications of the ACM*, vol. 49 (8), pp. 29-31, 2006

13. W. Birmingham, R. Dannenberg, **B. Pardo**, "An Introduction to Query by Humming with the

VocalSearch System," *Communications of the ACM*, vol. 49 (8), pp. 49-52, 2006

14. **B. Pardo**, "Finding Structure in Audio for Music Information Retrieval," *IEEE Signal Processing Magazine*, vol. 23(3), pp. 126-132, 2006

15. R. Dannenberg, W. Birmingham, G. Tzanetakis, C. Meek, N. Hu, and **B. Pardo**, "The MUSART Testbed for Query-By-Humming Evaluation, " *Computer Music Journal*, vol. 28 (2), pp. 34-48, 2004

16. **B. Pardo**, W. Birmingham, and J. Shifrin, "Name that Tune: A Pilot Study in Finding a Melody from a Sung Query," *Journal of the American Society for Information Science and Technology*, vol. 55 (4), pp. 283-300, 2004

17. C. Menezes**, B. Pardo**, D. Erickson, and O. Fujimura, "Changes in Syllable Magnitude and Timing due to Repeated Correction," *Speech Communication*, vol. 40, issue 1-2, pp. 71-85, 2003

18. **B. Pardo** and W. Birmingham, "Algorithms for Chordal Analysis," *Computer Music Journal*, vol. 26 (2), pp. 27-49, 2002

19. D. Erickson, O. Fujimura, and **B. Pardo**, "Articulatory Correlates of Prosodic Control: Emotion and Emphasis," *Language and Speech*, vol. 41 (3-4), pp. 395-413, 1998

CONFERENCES AND WORKSHOPS REVIEWED ON FULL PAPER SUBMISSIONS

1. Z. Rafii and **B. Pardo**, "A simple user interface system for recovering patterns repeating in time and frequency in mixtures of sounds," *Proceedings of the 2015 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Brisbane, Australia, April 19-24, 2015

2. M. Cartwright and **B. Pardo**,"Vocal Sketch: Vocally Imitating Audio Concepts," *ACM Computer Human Interaction Concerence (CHI 2015),* Seoul, Korea, April 18-23, 2015

3. B. Kim and **B. Pardo**, " Speeding Learning of Personalized Audio Equalization," *International Conference on Machine Learning and Applications*, Detroit, Michigan, December 3-5, 2014

4. B. Kim and **B. Pardo**, "Adapting Collaborative Filtering to Personalized Audio Production," *AAAI Conference on Human Computation and Crowdsourcing (HCOMP),* Pittsburgh, Pennsylvania, November 2-4, 2014

5. P. Seetharaman and **B. Pardo**, "Crowdsourcing a Reverberation Descriptor Map", *ACM Multimedia 2014*, Orlando, Florida, November 3-7, 2014 (20% acceptance rate)

6. M. Cartwright and **B. Pardo**, "SynthAssist: Querying an Audio Synthesizer by Vocal Imitation," *14th International Conference on New Interfaces for Musical Expression (NIME),* London, UK, June 30- July 4, 2014 (25% acceptance rate)

7. M. Cartwright and **B. Pardo,** "Translating Sound Adjectives by Collectively Teaching Abstract Representations," *Collective Intelligence 2014 Conference*, Boston MA, June 10-12, 2014

8. A. Liutkus, Z. Rafii, **B. Pardo**, D. Fitzgerald, L. Daudet, "Kernel spectrogram models for source separation," *4th Joint Workshop on Hands-free Speech Communication and Microphone Arrays (HSCMA),* Nancy, France, May 12-14, 2014

9. Z. Duan, **B. Pardo**, L. Daudet, "A Novel Cepstral Representation for Timbre Modeling of Sound Sources in Polyphonic Mixtures," *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Florence, Italy, May 4-9, 2014

10. M. Cartwright, **B. Pardo**, J. Reiss, "MIXPLORATION: Rethinking the Audio Mixer Interface," *International Conference on Intelligent User Interfaces (IUI 2014),* Haifa, Israel, 24-27 February, 2014 (24% acceptance rate)

11. M. Cartwright and **B. Pardo**, "SocialEQ: Crowdsourcing an Equalization Descriptor Map," *Proceedings of the International Society of Music Information Retrieval Conference (ISMIR 2013)*, Curitiba, PR, Brazil - 4-8 November, 2013

12. Z. Rafii and **B. Pardo**, "Online RPET-SIM for Real-time Speech Enhancement**,"** *Proceedings of the 2013 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Vancouver, B.C. Canada, May 26-31, 2013

13. **B. Pardo**, D. Little and D. Gergle, "Building a Personalized Audio Equalizer Interface with Transfer

Learning and Active Learning," *2nd International ACM Workshop on Music Information Retrieval with User-Centered and Multimodal Strategies (MIRUM),* Nara, Japan November 2, 2012

14. M. Cartwright and **B. Pardo**, "Novelty Measures as Cues for Temporal Salience in Audio Similarity," *2nd International ACM Workshop on Music Information Retrieval with User-Centered and Multimodal Strategies (MIRUM),* Nara, Japan November 2, 2012

15. Z. Rafii and **B. Pardo**, "Music/Voice Separation Using the Similarity Matrix," *Proceedings of the International Society of Music Information Retrieval Conference (ISMIR 2012),* Porto, Portugal, October 8-12, 2012

16. J. Han, G. Mysore and **B. Pardo**, "Language Informed Bandwidth Expansion," *Proceedings of the IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2012),* Santander, Spain, September 23-26, 2012

17. M. Cartwright and **B. Pardo**, "Building a Music Search Database Using Human Computation," *Proceedings of the 9th Sound and Music Computing Conference (SMC 2012),* Copenhagen, Denmark, July 12-14, 2012

18. **B. Pardo**, D. Little and D. Gergle, "Towards Speeding Audio EQ Interface Building with Transfer Learning," *Proceedings of New Interfaces for Musical Expression (NIME) 2012,* Ann Arbor, MI, USA, May 21-23, 2012

19. A. Liutkus, Z. Rafii, R. Badeau, **B. Pardo** and G. Richard, "Adaptive Filtering for Music/Voice Separation Exploiting the Repeating Musical Structure," *Proceedings of the 2012 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Kyoto, Japan, March 25-30, 2012

20. J. Han, G. Mysore and **B. Pardo**, "Audio Imputation using the Non-negative Hidden Markov Model," *LVA ICA 2012, The 10th International Conference on Latent Variable Analysis and Signal Separation*, Tel-Aviv Israel, March 12-15, 2012

21. Cartwright, M. and **B. Pardo**, " Interactive Learning for Creativity Support in Music Production," *Proceedings of the Semi-Automated Creativity Workshop* at *ACM Creativity and Cognition*, Atlanta, GA, USA, November 3-6, 2011

22. Z. Duan and **B. Pardo,** "Aligning Semi-improvised Music Audio with its Lead Sheet," *Proceedings of the International Society of Music Information Retrieval Conference (ISMIR 2011),* Miami, FL, USA, October 24-28, 2011

23. M. Cartwright, Z. Rafii, J. Han, and **B. Pardo**. "Making Searchable Melodies: Human vs. Machine," *Proceedings of the 2011 AAAI Workshop on Human Computation*, San Francisco, USA. August 8, 2011

24. D. Little, **B. Pardo**, B. Wright, "A Computational Model of Auditory Perceptual Learning: Predicting Learning Interference Across Multiple Tasks," *Proceedings of CogSci 2011*, Boston, MA, USA, July 20 - 23, 2011

25. Z. Duan and **B. Pardo**, "A State Space Model for Online Polyphonic Audio-Score Alignment," *Proceedings of the 2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Prague, Czech Republic, May 22-27, 2011

26. J. Han and **B. Pardo**, "Reconstructing Completely Overlapped Notes from Musical Mixtures," *Proceedings of the 2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Prague, Czech Republic, May 22-27, 2011

27. Z. Rafii and **B. Pardo**, "A Simple Music/Voice Separation Method Based on the Extraction of the Repeating Musical Structure," *Proceedings of the 2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Prague, Czech Republic, May 22-27, 2011

28. Z. Rafii and **B. Pardo**, "Degenerate Unmixing Estimation Technique Using the Constant Q Transform," *Proceedings of the 2011 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP),* Prague, Czech Republic, May 22-27, 2011

29. E. Scott, P. M. Silva, **B. Pardo**, and T. N. Pappas, "Adaptive user interfaces for relating high-level concepts to low-level photographic parameters," in *Human Vision and Electronic Imaging XVI Proc. SPIE vol. 7865,* San Francisco, CA, pp. 786510-1-12, January, 2011.

30. D. Little and **B. Pardo**, "Computational Models of Perceptual Learning Across Multiple Auditory Tasks: Modeling Daily Learning Limits as Memory Decay," *Proceedings of the 10th International Conference on Cognitive Modeling (ICCM),* Philadelphia, PA, Aug 5, 2010

31. A. Huq, M. Cartwright and **B. Pardo**, "Crowdsourcing a Real-world On-line Query by Humming System," *Proceedings of the 7th Sound and Music Computing Conference (SMC 2010),* Barcelona, Spain, July 21-24, 2010

32. Z. Duan, J. Han and **B. Pardo**, "Song Level Multi-pitch Tracking by Heavily Constrained Clustering," *Proceedings of the 2010 IEEE International Conference on Acoustics, Speech and Signal Processing,* Dallas, TX, March 14-19, 2010

33. Z. Rafii and **B. Pardo**, " Learning to Control A Reverberator Using Subjective Perceptual Descriptors," *Proceedings of the 10th International Society of Music Information Retrieval Conference (ISMIR 2009),* Kobe, Japan, October 26-30, 2009

34. Z. Duan, J. Han and **B. Pardo**, " Harmonically Informed Multi-pitch Tracking," *Proceedings of the 10th International Society of Music Information Retrieval Conference (ISMIR 2009),* Kobe, Japan October 26-30, 2009

35. A. Sabin and **B. Pardo**, "2DEQ: An Intuitive Audio Equalizer," *Proceedings of ACM Creativity and Cognition 2009*, Berkeley, CA, October 27-29, 2009

36. A. Sabin and **B. Pardo**, "'A method for rapid personalization of audio equalization parameters," *Proceedings of ACM Multimedia 2009*, Beijing, China, October 19 - 24, 2009

37. J. Han and **B. Pardo**, "Improving Separation of Harmonic Sources with Iterative Estimation of Spatial Cues," *2009 IEEE Workshop on Applications of Signal Processing to Audio and Acoustics*, New Paltz, NY, USA, October 18-21, 2009

38. J. Zujovic, L. Gandy, S. Friedman, **B. Pardo,** and T. Pappas, "Classifying Paintings by Artistic Genre: An Analysis of Features & Classifiers," *International Workshop on Multimedia Signal Processing - MMSP'09*, Rio de Janeiro, Brazil, October 5-7, 2009

39. B. Duane and **B. Pardo**, "Streaming from MIDI using constraint satisfaction optimization and sequence alignment," *Proceedings of the 2009 International Computer Music Conference (ICMC 2009),* Montreal, CA, August 16-21, 2009

40. J. Liu, L. Birnbaum and **B. Pardo**, "Spectrum: Retrieving Different Points of View from the Blogosphere ," *Proceedings of the 3rd International AAAI Conference on Weblogs and Social Media(ICWSM 2009)*, San Jose, California, May 17 - 20, 2009

41. J. Liu, L. Birnbaum and **B. Pardo**, "Categorizing Bloggers' Interests: Methods and Applications," *Proceedings of the ACM 17th Conference on Information and Knowledge Management (CIKM 2008*), Napa Valley, CA, USA, October 26-30, 2008

42. M. Skalak, J. Han**, B. Pardo**, "Speeding Melody Search with Vantage Point Trees", *Proceedings of the International Society of Music Information Retrieval Conference(ISMIR 2008)*, Philadelphia, PA, USA, September 14-18, 2008

43. D. Little and **B. Pardo**, "Learning Musical Instruments from Polyphonic Audio with Weak Labels", *Proceedings of the International Society of Music Information Retrieval Conference (ISMIR 2008),* Philadelphia, USA, September 14-18, 2008

44. Y. Gao, M. Yang, X. Zhao, **B. Pardo**, Y. Wu, T. Pappas, A. Choudhary, "Image Spam Hunter," *Proceedings of the 2008 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2008),* Las Vegas, Nevada, USA, March 30 – April 4, 2008

45. N. Nichols, J. Liu, **B. Pardo**, K. Hammond and L. Birnbaum, "Learning to Gesture: Applying Appropriate Animations to Spoken Text," in *Proceedings of ACM Multimedia 2007*, Augsburg, Germany, September 24 – 29, 2007

46. D. Little, D. Raffensperger, **B. Pardo**, "A Query by Humming System that Learns from Experience," *Proceedings of the 8th International Society of Music Information Retrieval Conference (ISMIR 2007)*, Vienna, Austria, September 23-27, 2007

47. B. Fox, A. Sabin, **B. Pardo**, A. Zopf, "Modeling Perceptual Similarity of Audio Signals for Blind Source Separation Evaluation," *Proceedings of the 7th International Conference on Independent Component Analysis and Signal Separation*, London, England, September 9-12, 2007

48. B. Fox and **B. Pardo**, "Towards a Model of Perceived Quality of Blind Audio Source Separation," in *Proceedings of the 2007 IEEE International Conference on Multimedia and Expo (ICME 2007*), Beijing, China, July 2-5, 2007

49. D. Little, D. Raffensperger, and **B. Pardo**. "User specific training of a music search engine," *Machine Learning and Multimodal Interaction: Fourth International Workshop, MLMI 2007*, Brno, CZ, June 28-30, 2007, Lecture Notes in Computer Science. Springer, 2007

50. **B. Pardo**, "Design considerations for technology to support music improvisation ," in *Proceedings of 6th Creativity and Cognition Conference Workshop on Supporting Creative Acts Beyond Dissemination*, Washington DC, USA, June 13-15, 2007

51. **B. Pardo** and D. Shamma, "Teaching a Music Search Engine Through Play," in *Proceedings of CHI 2007 Workshop on Vocal Interaction in Assistive Technologies and Games (CHI 2007),* San Jose, CA, USA, April 29 – May 3, 2007

52. D. Shamma and **B. Pardo**, " Karaoke Callout: using social and collaborative cell phone networking for new entertainment modalities and data collection," in *Proceedings of ACM Multimedia Workshop on Audio and Music Computing for Multimedia (AMCMM 2006),* Santa Barbara, CA, USA, October 23-27, 2006

53. J. Woodruff, **B. Pardo** and R. Dannenberg, "Remixing Stereo Music with Score-informed Source Separation," in *Proceedings of the 7th International Society of Music Information Retrieval Conference (ISMIR 2006),* Victoria, Canada, October 8-12, 2006

54. A. Shamma, **B. Pardo**, and K. Hammond, "MusicStory: a Personalized Music Video Creator," in *Proceedings of ACM Multimedia 2005*, Singapore, November 6-11, 2005

55. **B. Pardo** and M. Sanghi, "Polyphonic Musical Sequence Alignment for Database Search," in *Proceedings of the 6th International Conference on Music Information Retrieval,* London, England, September 11-15, 2005

56. **B. Pardo** and W. and Birmingham, "Modeling Form for On-line Following of Musical Performances," in *Proceedings of the Twentieth National Conference on Artificial Intelligence (AAAI)*, Pittsburgh, Pennsylvania, July 9-13, 2005

57. **B. Pardo**, "Tempo Tracking with a Single Oscillator," in *Proceedings of the 5th International Society of Music Information Retrieval Conference (ISMIR 2004)*, Barcelona, October 10-14, 2004

58. R. Dannenberg, W. Birmingham, G. Tzanetakis, C. Meek, N. Hu, and **B. Pardo**, "The MUSART testbed for query-by-humming evaluation," in *Proceedings of the 4th International Society of Music Information Retrieval Conference (ISMIR 2003)*, Baltimore, Maryland, October 26-30, 2003

59. **B. Pardo** and W. Birmingham, "Query by Humming: How good can it get?," *Workshop on Music Information Retrieval, SIGIR 2003*, Toronto, Canada, July 28 - August 1, 2003

60. **B. Pardo** and W. Birmingham, "Encoding Timing Information for Musical Query Matching," in *Proceedings of the 3th International Society of Music Information Retrieval Conference (ISMIR 2002)*, Paris, France, October 13-17, 2002

61. **B. Pardo** and W. Birmingham, "Improved Score Following for Acoustic Performances," in *Proceedings of the International Computer Music Conference*, Gothenburg, Sweden, September 16-20, 2002

62. J. Shifrin, **B. Pardo**, C. Meek, and W. Birmingham, "HMM-Based Musical Query Retrieval," in *Proceedings of the 3rd ACM/IEEE Joint Conference on Digital Libraries*, Portland, Oregon, USA, July 14-18, 2002

63. **B. Pardo**, C. Meek, and W. Birmingham, "Comparing Aural Music-Information Retrieval Systems, " *Workshop on the Creation of Standardized Test Collections, Tasks, and Metrics for Music Information Retrieval (MIR) and Music Digital Library (MDL) Evaluation. Joint Conference on Digital Libraries*, Portland, Oregon, USA, July 14-18, 2002

64. **B. Pardo** and W. Birmingham, "Following a Musical Performance from a Partially Specified Score, " in *Proceedings of the 2001 Multimedia Technology and Applications Conference*, Irvine, California, November, 2001

65. C. Mitchell, C. Menezes, J. Williams, **B. Pardo**, D. Erickson, and O. Fujumura, "Changes in Syllable and Boundary Strengths due to Irritation," *ISCA Workshop on Speech and Emotion*, Belfast, September 2000

66. **B. Pardo** and W. Birmingham, "On the computational properties of harmonic analysis," *Workshop on Artificial Intelligence and Music*, AAAI 2000, Austin, TX, July 2000

67. **B. Pardo** and W. Birmingham, "Automated Partitioning of Tonal Music," in *Proceedings of the 13th International FLAIRS Conference*, Orlando, Florida, May 2000

68. O. Fujimura, **B. Pardo**, D. Erickson, "Effect of Emphasis and Irritation on Jaw Opening," in *Proceedings of ESCA 98*, Aix en Provence, France, September, 1998

BOOK CHAPTERS

1. Zafar Rafii, Antoine Liutkus, **Bryan Pardo,** "REPET for Background/Foreground Separation in Audio," in *Blind Source Separation Signals and Communication Technology*, 2014, pp 395-411

2. D. Shamma, **B. Pardo** and J. Woodruff, " MusicStory: An Autonomous, Personalized Music Video Creator," in *Intelligent Music Information Systems-Tools and Methodologies*, Idea Group Reference, ISBN-13: 978-1599046631, August, 2007

PAPERS REVIEWED ON EXTENDED ABSTRACTS

1. M. Cartwright and B. Pardo, "Audio Production with Intelligent Machines," *Collaborating with Intelligent Machines: Interfaces for Creative Sound Workshop at CHI 2015*, April 18, 2015

2. M. Cartwright and **B. Pardo**, "SynthAssist: An Audio Synthesizer Programmed With Vocal Imitation," *ACM Multimedia 2014*, Orlando, Florida, November 3-7, 2014

3. P. Seetharaman and **B. Pardo**, "Reverbalize: A crowdsourced reverberation controller," *ACM Multimedia 2014,* Orlando, Florida, November 3-7, 2014

4. J. Spring, Z. Duan, and **B. Pardo**, "Approaches to Multiple Concurrent Species Birdsong Recognition," *The 2nd International Workshop on Machine Listening in Multisource Environments (CHIME*), Vancouver, Canada, June 1, 2013

5. M. Greenberg, K. Hariharan, E. Gerber, and **B. Pardo**, "Crowdfunding Support Tools: Predicting Success & Failure," Works-in-progress, Computer Human Interaction Conference (CHI 2013), Paris, France, April 2013

6. A. Sabin and **B. Pardo**, " Rapid learning of Subjective Preference in Equalization," *125th meeting of the Audio Engineering Society*, San Francisco, CA, October 2-5, 2008

7. C. Menezes, D. Erickson, J. McGory, **B. Pardo**, and O. Fujimura, "An Articulatory and Perceptual Study of Phrasing," *ISCA Workshop on Speech Perception*, Aix-en-Provence, France, April 8-10, 2002

8. **B. Pardo**, and J. Josephson, "A study of the Patterson and Holdsworth auditory model and its utility in automated recognition of the plosive consonants," *Journal of the Acoustical Society of America*, Vol. 95, No. 5, Pt. 2, May 1994

TECHNICAL REPORTS

1. D. Little and **B. Pardo**, "Online Training of a Music Search Engine," Northwestern University, EECS Department Technical Report NWU-EECS-07-03, 2007

2. J. Woodruff and **B. Pardo**, "Active Source Estimation for Improved Source Separation," Northwestern University, EECS Department Technical Report NWU-EECS-06-01, 2006

3. **B. Pardo** and W. Birmingham, "The Chordal Analysis of Tonal Music," University of Michigan, EECS Department Technical Report CSE-TR-439-01, 2001

UNREFEREED MAGAZINE ARTICLES

1. W. Birmingham, C. Meek, K. O'Malley, **B. Pardo**, and J. Shifrin, "Music Information Retrieval Systems," *Dr. Dobbs Journal*, September 2003, pp. 50-53

2. W. Birmingham, **B. Pardo**, C. Meek, and J. Shifrin, "The MusArt Music-Retrieval System: An Overview," *D-lib Magazine*, February 2002, 8 (2)

INVITED LECTURES AND SEMINARS

INVITED COLLOQUIA AT UNIVERSITIES

1. August 25, 2014, Stanford University CCRMA, "Crowdsourcing Audio Production Interfaces"

2. June 18, 2013, City University of London, "Computer Audition - Analyzing Complex Auditory Scenes"

3. June 13, 2013, Telecom Paris Tech, "Computer Audition - Analyzing Complex Auditory Scenes"

4. May 20, 2013, Imperial College, Electrical Engineering, "Leveraging Repetition to Parse the Audio Scene"

5. May 11, 2013, University of Chicago Tedx Talk, "Teaching Machines to Listen"

6. May 1, 2013, Queen Mary University of London, Electric Engineering and Computer Science, "Leveraging Repetition to Parse the Audio Scene"

7. November 13, 2012, University of Illinois at Urbana-Champaign, Computer Science, "Teaching Machines to Listen"

8. November 8, 2012, Georgia Institute of Technology, School of Music, "Teaching Machines to Listen"

9. March 19 , 2012, University of Michigan, Electrical Engineering and Computer Science, "Recent work in Audio Source Separation and Adaptive Audio Interfaces"

10. January 11 , 2012, University of Central Florida, Electrical Engineering and Computer Science, "Tunebot and iQ: Music Software that Listens"

11. November 12 , 2011, Eastman School of Music, " Tunebot and Soundlearner: How teaching machines music makes musicians' lives better"

12. March 23, 2011, New York University, School of Music, "Reconstructing Completely Overlapped Notes from Musical Mixtures"

13. May 27, 2010, Union College, Computer Science "Tunebot and Karaoke Callout"

14. March 27, 2009, Princeton, Computer Science, "Teaching Machines to Listen"

15. March 23, 2009, New York University, School of Music, "Teaching Machines to Listen"

16. October 20, 2008, University of Texas at Austin, Computer Science, "Teaching Machines to Listen"

17. October 10, 2008, Arizona State University, Arts, Media and Engineering, "Teaching Machines to Listen"

18. October 3, 2008, Indiana University, School of Informatics, "Separation of Harmonic Instruments from Stereo Music Recordings"

19. April 29, 2008, The Ohio State University, Computer Science and Engineering "Teaching Machines to Listen"

20. March 25, 2008, Georgia Institute of Technology, Literature Communication and Culture, "Teaching Machines to Listen"

21. March 21, 2008, University of Miami, Electrical and Computer Engineering, "Teaching Machines to Listen"

22. March 20, 2008, University of Miami, Music Engineering Technology Colloquium, "Separation of Harmonic Instruments from Stereo Music Recordings"

23. September 13, 2007, University of Edinburgh, Music, Informatics and Cognition Seminar Series, "Separation of Harmonic Instruments from Stereo Music Recordings"

24. October 20, 2006, Stanford University, Center for Computer Research in Music and Acoustics, Hearing Seminar, "Harmonic source separation using pitch, amplitude, and spatial cues"

25. November 13, 2005, University Putra Malaysia, Faculty of Computer Science and Information Technology Seminar Series, "Audio Presence: new tools for musical information retrieval and interaction"

26. November 3, 2005, University of Southern California, Integrated Media Systems Center Seminar Series, "Audio Presence: new tools for musical information retrieval and interaction"

27. March 4, 2004 Ohio State University, Computer Science and Engineering Colloquium Series, "Name That Tune: Finding a Song from a Sung Query"

28. February 10, 2004, Johns Hopkins University, Center for Language and Speech Seminar Series, "Name That Tune: Finding a Song from a Sung Query"

29. January 29, 2004, Indiana University, School of Informatics Colloquium, "Name That Tune: Finding a Song from a Sung Query"

INVITED COLLOQUIA AT INDUSTRY RESEARCH LABS

1. September 5, 2014, Gracenote, Emeryville, CA, "Crowdsourcing Audio Production Interfaces"

2. September 4, 2014, Adobe, San Francisco, CA, "Crowdsourcing Audio Production Interfaces"

3. March 18, 2014, Izotope, Boston MA, "Crowdsourcing Audio Production Interfaces"

4. September 11, 2013, Microsoft Research New England, "Crowdsourcing Audio Production Interfaces"

5. June 28, 2013, Google London, "Computer Audition - Analyzing Complex Auditory Scenes"

6. August 14, 2008, Yahoo! Research, Santa Clara, CA, "Adaptive Interfaces for Musical Expression"

7. August 12, 2008, Sony Gracenote, Emeryville, CA, "Teaching Machines to Listen"

8. October 20, 2006, Yahoo! Research, Berkeley, CA, "Harmonic source separation and query-by-humming: new tools for music information retrieval and interaction"

9. October 19, 2006, Gracenote, Emeryville, CA, "Harmonic source separation and query-by-humming: new tools for music information retrieval and interaction"

10. October 18, 2006, Dolby Labs, San Francisco, CA, "Harmonic source separation using spatial cues"

11. October 13, 2006, Microsoft Research, Redmond, WA, "Music Information Retrieval: Query-By-Humming and Source Estimation"

12. August 30, 2005, Motorola Labs Center for Applications, Content and Services Research, Schaumburg, IL, "Overview of Current Research"

OTHER INVITED COLLOQUIA

1. March 21, 2014, Music Tech Fest, Boston, MA, "Crowdsourcing Audio Production Interfaces"

2. June 26, 2013, Workshop on Software and Data for Audio and Music Research, "Tunebot: Software development, data sharing and data protection in an academic environment"

3. June 10, 2013, ACM Multimedia Program Committee Workshop, "SocialEQ: learning an audio production interface from the user"

4. January 16, 2009, National Science Foundation Sponsored CreativeIT Program PI Meeting, Arlington, VA, "Adaptive Interfaces for Musical Expression"

5. September 27, 2006, Chicago Chapter of the ACM, DePaul University, Chicago, IL, "Music Information Retrieval"

EXTERNAL SERVICE

JOURNAL EDITOR
2009-13   Associate editor, *IEEE Transactions on Audio, Speech and Language Processing*
2006   Guest editor, *Communications of the ACM*

PROFESSIONAL ORGANIZATION/ CONFERENCE AREA CHAIR
2015   Technical Chair, WASSPA
2014,15   Area Chair, Music Information Retrieval, *ICASSP 2014, 2015*
2013-15   Audio and Acoustic Signal Processing Technical Committee: IEEE Signal Processing Society
2013   Area Chair, Audio and Music, *ACM Multimedia Conference*
2011   Demo Session Chair - *ISMIR International Conference on Music Information Retrieval*

JOURNAL REVIEWER
2014   *ACM Transactions on Multimedia Computing Communications and Applications*
2011   *IEEE Journal of Selected topics in Signal Processing*
2010   *Journal of New Music Research*
2009   *Music Perception*
2008-9   *Journal of Intelligent Information Systems*
2008   *Journal of Mathematics and Music*
2007   *Communications of the ACM*
2006-14   *IEEE Transactions on Audio, Speech and Language Processing*
2006-13   *EURASIP Journal on Applied Signal Processing*
2005   *Musicae Scientiae*
2004-06   *Computer Music Journal*

CONFERENCE PROGRAM COMMITTEE / REVIEWER
2013-14   *IEEE Signal Processing Society Technical Committee*
2012-14   *NIME New Interfaces for Musical Expression*
2011-15   *ACM CHI*
2011   *ACM Creativity and Cognition*
2008-14   *ISMIR International Conference on Music Information Retrieval*
2009   *World Wide Web: UI and Mobility Track*
2009   *Mathematics and Computation in Music*
2008   *Joint Conference on Digital Libraries*
2008   *IEEE International Symposium on Circuits and Systems*
2008   *International Symposium on Methodologies for Intelligent Systems*
2008-10   *ICMC International Computer Music Conference*
2006-7   *ACM Multimedia Conference, Interactive Arts Program*

OTHER SERVICE
2005-14   Referee and panelist, National Science Foundation
2009   Referee, Austrian Academy of Sciences

ORGANIZATIONAL MEMBERSHIPS

Acoustical Society of America
American Association for Artificial Intelligence
Association for Computing Machinery
International Association of Jazz Educators

International Computer Music Association
Institute of Electrical and Electronics Engineers
Society of Hispanic Professional Engineers

UNIVERSITY SERVICE

2012-13	Acting Division Chair, Cognitive Systems, EECS
2011-14	Member, Segal Design Faculty Search Committee
2011-15	Member, EECS Faculty Search Committee
2006-14	Member, Steering Committee, TSB Joint Ph.D. program
2006-15	Member, EECS Undergraduate Recruiting Committee
2005-15	Member, Cognitive Science Program Committee
2004-15	Member, EECS Graduate Committee
2009	Member, Music Technology Faculty Search Committee
2008	Member, EECS Cognitive Systems Faculty Search Committee
2004-8	Member, EECS Computer Science Undergraduate Curriculum Committee
2005	Mentor, Northwestern Summer Research Opportunity Program
2005-14	Undergraduate Advisor

TEACHING

DOCTORAL THESIS SUPERVISOR

Zafar Rafii, Computer Science (graduation August 2014). Title: *Source Separation by Repetition*

Zhiyao Duan, Computer Science (graduation June 2013) Title: *Computational Music Audio Scene Analysis*

Jinyu Han, Computer Science (graduation August 2012). Title: *Computational Auditory Scene Induction*

MASTERS THESIS SUPERVISOR

John Woodruff, Master Thesis, Program in Music Technology (School of Music). Title: *Active Source Estimation for Improved Source Separation* (Graduated summer 2006)

DOCTORAL THESIS READER

Pubudu Silva, Doctoral Dissertation, Electrical Engineering (Graduation August 2014)

Benjamin Duane, Doctoral Dissertation, Music Theory (Graduation June 2012)

Scott Friedman, Doctoral Dissertation, Computer Science (Graduation June 2012)

Nathan Nichols, Doctoral Dissertation, Computer Science (Graduation June 2010)

Yan Gao, Doctoral Dissertation, Computer Science. (Graduation June 2010)

Morteza Dehghani, Doctoral Dissertation, Computer Science (Graduation December 2009)

Kate Lockwood, Doctoral Dissertation, Computer Science (Graduation June 2009)

Jiahui Liu, Doctoral Dissertation, Computer Science (Graduation June 2009)

Sanjay Sood, Doctoral Dissertation, Computer Science (Graduation June 2007)

Holger Winnemoeller, Doctoral Dissertation, Computer Science (Graduation September 2006)

Vidya Setlur, Doctoral Dissertation, Computer Science (Graduation June 2005)

MASTERS THESIS READER

Edward Scott, Electrical Engineering (Graduated December 2010)

Chi Yin Cheung, Computer Science (Graduated December 2007)

Spring 2014, EECS 395/495 ***Computational Auditory Scene Analysis,*** Northwestern University, Electrical Engineering and Computer Science, Enrollment: 5, Designed: yes, CTEC student overall instruction rating: 6 out of 6 (Taught previously: Winter 2009)

Winter 2014, EECS 352 ***Machine Perception of Music and Audio***, Northwestern University, Electrical Engineering and Computer Science, Enrollment: 40, Designed: yes, CTEC student overall instruction rating: 5.25 out of 6 (Taught previously: Winter 2010, Winter 2008, Winter 2006, Winter 2005)

Fall 2013, EECS 349 ***Machine Learning***, Northwestern University, Electrical Engineering and Computer Science, Enrollment: 40 Designed: yes, CTEC student overall instruction rating: 5.35 out of 6 (Taught previously: Fall 2012, Fall 2011, Fall 2009, Fall 2007, Winter 2007)

Spring 2011, EECS 348 ***Introduction to Artificial Intelligence***, Northwestern University, Electrical Engineering and Computer Science, Enrollment: 50 Designed: yes, CTEC student overall instruction rating: 4.4 out of 6 (Taught previously: Spring 2009, Spring 2008, Spring 2007, Spring 2006, Spring 2005)

Spring 2010, EECS 395/495 ***Active Learning and Crowdsourcing***, Northwestern University, Electrical Engineering and Computer Science, Enrollment: 10, Designed: yes, CTEC student overall instruction rating: 5.2 out of 6

Winter 2004, MUS 1800 ***Introduction to Music Technology***, Madonna University, Music Department, Enrollment: 5, Designed: yes (Taught previously: Winter 2003)

SELECTED MUSICAL PERFORMANCES

September 21, 2014, with Wanees Zarour, Chicago World Music Festival, Chicago, IL

September 27, 2013, with *Balkano*, Old Town School of Folk Music, Chicago, IL

September 25, 2012, with *Ecos del Pacifico*, Chicago World Music Festival, Chicago, IL

September 22, 2012, with *Balkano*, Chicago World Music Festival, Chicago, IL

March 21, 2012, with *Swing Hakim,* broadcast/interview on 848 radio program, WBEZ, Chicago, IL

March 19, 2012, with *Balkano,* Gottlieb Music Festival, Berman Center, West Bloomfield, MI

November 18, 2011, with *Swing Hakim,* Chicago Cultural Center, Chicago, IL

April 1, 2011, with *Balkano*, Chicago Cultural Center, Chicago, IL

September 27, 2010, with *Balkano*, Chicago World Music Festival, Chicago, IL

July 3, 2009, with *Mucca Pazza*, Detroit Museum of Contemporary Art, Detroit, MI

June 14, 2009, with *Balkano*, Petty Auditorium, Skokie, IL

January 30, 2009, with *Balkano*, Chicago Cultural Center, Chicago, IL

October 17, 2008, with *Mucca Pazza*, Modern Art Museum, Fort Worth, TX

October 12, 2008, with *Mucca Pazza*, Rialto Theatre, Tucson, AZ

October 11, 2008, with *Mucca Pazza*, Tour de Fat, Tempe Town Lake, Tempe, AZ

October 3, 2008, with *Mucca Pazza*, Lotus World Music Festival, Bloomington, IN

June 30, 2008, with *Balkano*, Taste of Chicago Festival, Grant Park, Chicago, IL

January 11, 2008, with *Balkano*, Chicago Cultural Center, Chicago, IL

SELECTED ART INSTALLATIONS AND EXHIBITS

June 22, 2005, "Music Story," Wired: Next Music Festival, Vic Theater, Chicago, IL

October 4-27, 2000, "Tree Tracks: Branching Beyond the Disciplinary," Media Union Theater, University of Michigan, Ann Arbor, MI

DISCOGRAPHY

"Awayland", with *Urbana*, 2014

"Swing Hakim," with *Swing Hakim,* 2011

"Balkano," with *Balkano,* 2009

 "Presences," with *Spider Trio,* 2007

"This and That," with *Gabriel Bolkosky*, 2005

"The Shape of Klez to Come," with *Into the Freylakh*, 2004

"Original Flavor," with *Pardonato*, 2004

"Into The Freylakh," with *Into the Freylakh*, 2003

HONORS AND AWARDS

Northwestern Associated Student Government Honor Roll for Teaching Excellence, 2012

Northwestern EECS Department Teacher of the Year, 2010-2011

National Science Foundation Career Award, 2007