

Mark B. Cartwright

Brooklyn, NY
+1 (773) 850-1527
mcartwright@gmail.com
www.markcartwright.com

Education	Ph.D. in Computer Science 2016 Interactive Audio Lab Advisor: Bryan Pardo Northwestern University, Evanston, IL
	M.A. in Music, Science, and Technology 2007 Center for Computer Research in Music and Acoustics Advisor: Julius O. Smith III Stanford University, Stanford, CA
	B.Mus. in Music Technology 2004 Certificate in Sound Design Graduated with program honors Advisor: Gary Kendall Northwestern University, Evanston, IL
Research Interests	audio, music, human computer interaction, creativity support tools, multimedia information retrieval, machine learning, digital signal processing
Honors and Awards	Northwestern University Terminal Year Fellowship 2016 National Science Foundation Graduate Research Fellowship 2011-2015 ACM CHI Best Paper Award Honorable Mention 2015 ACM Multimedia Best Demo Award 2014 Helen and Robert Piros Fellowship 2009
Patents	Cartwright, M., Pardo, B. "Systems, Methods, and Apparatus to Search Audio Synthesizers using Vocal Imitation," U.S. Patent 20160133240, filed October 27, 2015, and issued May 12, 2016.
Research Experience	Post-Doctoral Researcher 9/16 - now New York University, New York, NY Music and Audio Research Laboratory P.I.: Juan Pablo Bello
	Research Assistant 9/09 - 8/16 Northwestern University, Evanston, IL Interactive Audio Lab Electrical Engineering and Computer Science Department

P.I.: Bryan Pardo

Research Intern 2/15 - 5/15
Adobe Research, San Francisco, CA
Creative Technologies Lab
Mentors: Gautham Mysore and Matt Hoffman

Visiting Student Researcher 2/13 - 11/13
Queen Mary University of London, London, UK
Center for Digital Music
Department of Electronic Engineering
Hosts: Josh Reiss and Andrew McPherson

Teaching Experience **Teaching Assistant** Winter 2016
EECS-352 Machine Perception of Audio and Music
Northwestern University

Teaching Assistant Fall 2014
DSGN 395-20 Data as Art
Northwestern University / School of the Art Institute of Chicago

Teaching Assistant Fall 2012
EECS-349 Machine Learning
Northwestern University

Teaching Assistant Spring 2011
EECS-348 Introduction to Artificial Intelligence
Northwestern University

Professional Experience **Audio Digital Signal Processing Engineer** 9/07 - 8/09
PacketVideo, Palatine, IL

Audio Post Production Engineer 11/05 - 5/06
Big House Audio, Chicago, IL

Additional Education **Summer Institute for Entrepreneurship** 7/07
Graduate School of Business
Stanford University, Stanford, CA

PhD Thesis Cartwright, M. Supporting Novice Communication of Audio Concepts for Audio Production Tools. PhD thesis, Northwestern University, 2016.

Refereed Conference Proceedings Brewer, R., Cartwright, M., Karp, A., Pardo, B., Piper, A.M. An Approach to Audio-Only Editing for Visually Impaired Seniors. In *Proceedings of the ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*, 2016.

Cartwright, M., Pardo, B., Mysore, G., Hoffman, M. Fast and Easy Crowdsourced Perceptual Audio Evaluation. In *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2016.

Ford, J., Cartwright, M., Pardo, B. MixViz: A Tool to Visualize Masking in Audio Mixes. In *Proceedings of the 139th International Audio Engineering Society Convention (AES)*, 2015.

Cartwright, M., Pardo, B. VocalSketch: Vocally Imitating Audio Concepts. In *Proceedings of ACM Conference on Human Factors in Computing Systems (CHI)*, 2015. ***Best Paper Award Honorable Mention***

Cartwright, M., Pardo, B. SynthAssist: Querying an Audio Synthesizer by Vocal Imitation. In *Proceedings of New Instruments for Musical Expression (NIME)*, 2014.

Cartwright, M., Pardo, B. Translating Sound Adjectives by Collectively Teaching Abstract Representations. In *Proceedings of the Collective Intelligence Conference*, 2014.

Cartwright, M., Pardo, B., Reiss, J. Mixploration: Rethinking the Audio Mixer Interface. In *Proceedings of the International Conference on Intelligent User Interfaces (IUI)*, 2014.

Cartwright, M., Pardo, B. Social-EQ: Crowdsourcing an Equalization Descriptor Map. In *Proceedings of the International Conference on Music Information Retrieval (ISMIR)*, 2013.

Cartwright, M., Pardo, B. Building a Music Search Database Using Human Computation. In *Proceedings of the Sound and Music Computing Conference (SMC)*, 2012.

Huq, A., Cartwright, M., Pardo, B. Crowdsourcing a Real-World On-Line Query By Humming System. In *Proceedings of the Sound and Music Computing Conference (SMC)*, 2010.

Cartwright, M., Jones, M., Terasawa, H. Rage in Conjunction with the Machine. In *Proceedings of New Instruments for Musical Expression (NIME)*, 2007.

**Refereed
Workshop
Proceedings**

Cartwright, M., Pardo, B. The Moving Target in Creative Interactive Machine Learning. In *Proceedings of the Workshop on Human Centred Machine Learning (HCML)* at the Conference on Human Factors in Computing Systems (CHI), 2016.

Cartwright, M., Pardo, B. Novelty Measures as Cues for Temporal Salience in Audio Similarity. In *Proceedings of the Workshop on Music Information Retrieval with User-Centered and Multimodal Strategies (MIRUM)* at the ACM International Conference on Multimedia (ACM MM), 2012.

Cartwright, M., Rafii, Z., Han, J., Pardo, B. Making Searchable Melodies: Human vs. Machine. In *Proceedings of the Workshop on Human Computation (HCOMP)* at the AAAI Conference on Artificial Intelligence (AAAI), 2011.

**Refereed
Technical
Demonstration
Proceedings**

Cartwright, M., Pardo, B. SynthAssist: An Audio Synthesizer Programmed With Vocal Imitation. In *Proceedings of the ACM International Conference on Multimedia (ACM MM)*, 2014. ***Best Demo Award***

**Non-Refereed
Publications**

Cartwright, M., Pardo, B. Audio Production with Intelligent Machines. Presented at Workshop on *Collaborating with Intelligent Machines: Interfaces for Creative Sound*, ACM Conference on Human Factors in Computing Systems (CHI), 2015.

Cartwright, M., Pardo, B. Interactive Learning for Creativity Support in Music Produc-

tion. Presented at Workshop on *Semi-Automated Creativity*, ACM Creativity and Cognition, 2011.

Invited Talks	“Give me a <ka-CHUNK>’: Rethinking the Interaction Paradigm of Audio Production Tools” University of Washington	Jun 1, 2016
	“Give me a <ka-CHUNK>’: Rethinking the Interaction Paradigm of Audio Production Tools” University of Toronto	Apr 7, 2016
	“Give me a <ka-CHUNK>’: Rethinking the Interaction Paradigm of Audio Production Tools” University of Illinois at Chicago	Mar 2, 2016
	“Crowdsourced Audio Quality Evaluation” BISH Bash (Bay Innovative Signal Hackers Bash), Hosted by Gracenote	Sep 17, 2015
	“Natural Communication and Exploration in Audio Production Interfaces” KAIST (Korea Advanced Institute of Science and Technology)	Apr 24, 2015
	“Natural Communication and Exploration in Audio Production Interfaces” Birmingham City University	Aug 6, 2014
	“Natural Communication and Exploration in Audio Production Interfaces” IRCAM (Institut de Recherche et Coordination Acoustique/Musique)	Jul 4, 2014
	“Building a Personalized Audio Equalizer Interface” Telecom ParisTech	Jun 13, 2013
External Service	Conference Reviewer IEEE International Conference on Acoustics, Speech, and Signal Processing	2014-17
	Journal Reviewer Journal on Multimodal User Interfaces	2016
	Conference Reviewer ACM Multimedia	2013-16
	Conference Reviewer International Society for Music Information Retrieval Conference	2009-10, 2012-16
	Conference Reviewer ACM SIGCHI Conference on Human Factors in Computing Systems	2014, 2016
	Conference Reviewer ACM International conference on Tangible, Embedded and Embodied Interaction (TEI)	2016
	Journal Reviewer IEEE Signal Processing Letters	2015
	Conference Reviewer IEEE Workshop on Applications of Signal Processing to Audio and Acoustics	2015

	Journal Reviewer IEEE Transactions on Audio, Speech and Language Processing	2010-12, 2014
	Conference Reviewer International Computer Music Conference	2012
	Journal Reviewer Information Retrieval	2011
	Conference Reviewer International Conference on Human-Computer Interaction with Mobile Devices and Services	2011
	Conference Reviewer IEEE International Workshop on Multimedia Signal Processing	2010
Discography	“Piñata” with <i>volcano!</i> , The Leaf Label	2012
	“Piñata (single)” with <i>volcano!</i> , The Leaf Label	2012
	“So Many Lemons (single)” with <i>volcano!</i> , The Leaf Label	2009
	“Paperwork” with <i>volcano!</i> , The Leaf Label • New York Times “Critic’s Choice”	2008 9/2008
	“Africa Just Wants To Have Fun (7-inch)” with <i>volcano!</i> , The Leaf Label	2008
	“Apple or a Gun (7-inch)” with <i>volcano!</i> , The Leaf Label	2006
	“Beautiful Seizure” with <i>volcano!</i> , The Leaf Label • DrownedInSound.com’s #2 Album of the Year	2005 2006
	“Chicago Union Station” with <i>Cartwright, Moorefield, Weeter</i> • Organised Sound DVD, Cambridge University Press	2004
	• International Computer Music Conference DVD	2004
Conference Presentations of Compositions	“Six Corners” by <i>Cartwright, Moorefield, Weeter</i> • Third Practice	2006
	“Chicago Union Station” by <i>Cartwright, Moorefield, Weeter</i> • Electronic Music Midwest	2005
	• Society for Electro-Acoustic Music in the United States	2005
	• International Computer Music Conference	2004
Selected Musical Performances	<i>volcano!</i> at Daytrotter.com, Rock Island, IL	12/7/12
	<i>volcano!</i> at WBEZ’s 848, Chicago, IL	6/12/12
	<i>volcano!</i> at Millenium Park, Chicago, IL	5/31/10
	<i>volcano!</i> at Tabula Rasa, Moscow, Russia	4/29/09
	<i>volcano!</i> at SWN Festival, Cardiff, UK	11/24/08
	<i>volcano!</i> at Botanique, Brussels, Belgium	11/05/08
	<i>volcano!</i> at Interzona, Verona, Italy	10/25/08
	<i>volcano!</i> at Radio RAI (Italian National Radio), Bolzano, Italy	10/23/08

<i>volcano!</i> at Lido, Berlin, Germany	10/21/08
<i>volcano!</i> at Harbourfront Centre, Toronto, Canada	8/25/06
<i>volcano!</i> at Villette Sonique Festival, Paris, France	6/24/06
<i>volcano!</i> at Huw Stephens Session (BBC Radio 1), London, UK	6/27/06
<i>volcano!</i> at SXSW, Austin, TX	3/17/06
<i>Cartwright, Moorefield, Weeter</i> at New Music Northwestern, Evanston, IL	5/22/05

Programming and Software Skills

- Python (+SciPy stack), Matlab, C, C++, JavaScript, Stan, SQL, R, Lisp, Java
- Max/MSP, SuperCollider
- Various music and audio production tools (e.g. Pro Tools, Logic, Live)

Professional Memberships

ACM (Association for Computing Machinery)
IEEE (Institute of Electrical and Electronics Engineers)
AES (Audio Engineering Society)

References

Bryan Pardo, Associate Professor at Northwestern University
pardo@northwestern.edu

Gautham Mysore, Senior Research Scientist at Adobe Research
gmysore@adobe.com

Darren Gergle, Associate Professor at Northwestern University
dgergle@northwestern.edu

Josh Reiss, Senior Lecturer at Queen Mary University of London
josh.reiss@eecs.qmul.ac.uk