

CURRICULUM VITAE

IAN HATTWICK

DEPARTMENT: Music and Theater Arts

DATE: October 2022

CITIZENSHIP: United States

EDUCATION

DATE	DEGREE	INSTITUTION
2017	Ph.D., Music Technology	McGill University
2011	M.F.A., Integrated Composition, Improvisation, and Technology	University of California, Irvine
2003	B.M., Jazz Composition	University of Southern California

TITLE OF DOCTORAL THESIS: The Creation of Hardware Systems for Professional Artistic Productions

FELLOWSHIPS AND HONORS

2017	Best Paper. Human-Computer International Conference – “The Vibro-pixels: a Scalable Wireless Tactile Display System.”
2011 – 2014	Graduate Excellence Fellowship. Schulich School of Music, McGill University
2012 – 2013	Director’s Interdisciplinary Prize. Centre for Interdisciplinary Research in Music Media and Technology – “Unsounding Objects – Audio Feature Extraction for Control of Sound Synthesis.”

PROFESSIONAL EXPERIENCE

ACADEMIC POSITIONS

2018 – Present	Lecturer I, Music Technology, Music and Theater Arts Department, Massachusetts Institute of Technology, Cambridge MA
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NON-ACADEMIC POSITIONS

2019 – Present Chief Technical Officer, Heath Interactive, Culver City, CA
2017 – 2019 Chief R & D Officer, The Phenomena, Montreal, Quebec, Canada
2001 – 2011 Freelance Musician, Los Angeles, California

GRANTS

2019 – 2021 Center for Art, Science & Technology Cross Disciplinary Class Development Grant, Instrument design as artistic practice – MIT, Cambridge Massachusetts (\$50k)
2019 – 2020 d’Arbeloff Fund for Excellence in Education Course Development Grant, MIT Laptop Ensemble – MIT, Cambridge Massachusetts (\$47k)
2019 – 2020 SHASS Research Fund, Multimodal String Instrument – MIT, Cambridge Massachusetts (\$15k)
2015 – 2016 Student Research Award, Centre for Interdisciplinary Research in Music Media and Technology – “How Max Became Live: An Interdisciplinary Investigation into the Convergence of Two Music Software Paradigms.”
2014 – 2015 Inter-Centre Research Exchange Award (2014 - 2015) Centre for Interdisciplinary Research in Music Media and Technology – Research visit to Princeton University
2014 – 2015 Student Research Award, Centre for Interdisciplinary Research in Music Media and Technology – “Control Strategies for a Human-Conducted Quadcopter Ballet.”
2012 – 2014 Student Research Award, Centre for Interdisciplinary Research in Music Media and Technology – “Unsounding Objects – Audio Feature Extraction for Control of Sound Synthesis.”
2010 – 2011 Graduate Student Research Grant, University of California, – “Guitars Make Gears Creak.”

SEMINARS, COLLOQUIA, ETC.

Invited Presentations

2022 Worcester Polytechnic Institute, Worcester MA (September 30, 2022)
“Design of Systems for Professional Arts Performances.”
2022 Art-Tech Paradigms of Practice and Pedagogy, Hong Kong (September 28, 2022)
“Arachnodrone / Spider’s Canvas.”

- 2021 Worcester Polytechnic Institute, Worcester MA (March 4, 2021)
“Haptics and Immersive Experiences.”
- 2019 Worcester Polytechnic Institute, Worcester MA (April 9 2019)
“Haptics and Immersive Experiences.”
- 2019 Tech Open Air, Berlin (July 3, 2019) “Enmeshed in the Sensory Web:
Shared Experiences in the Digital Arts”.
- 2017 Société des Arts Technologiques Symposium IX, Montreal QC (May 31,
2017) “Visuals, Sounds, and Haptics”, with Marcelo M. Wanderley,
Patrick Ignoto, and Jan Anlauff.
- 2017 Fashion Tech Fest, Montreal QC (May 27, 2017) “Metaphors Used for
Designing Wearable Technology”
- 2017 Ottawa Graduate Music Student Conference, Ottawa ON (March 10,
2017) “The More Things Change, the More We Stay the Same: the
Canadian Electronic Ensemble and 45 years of performing with
technology”
- 2016 Chronus Center for the Arts, Shanghai China (July 10, 2016) “Playing
with Touch: Haptics for Art and Design”, with Chris Salter
- 2016 CIRMMT Student Symposium, Montreal QC (June 1, 2016) “The Case of
Max for Live: On the Historical Convergence of Two Music Software
Paradigms”, with Victoria Simon and Landon Morrison
- 2016 Conference of the International Society for Improvised Music, Waterloo
ON (May 14, 2016) “Computing Music Together: Collaborative
Performance Using Digital Musical Instruments”
- 2016 Rochester Institute of Technology, Rochester NY (April 22, 2016)
“Creating Novel Digital Interfaces for Research into Collaborative Artistic
Practice”
- 2015 ICASP-McGill Interdisciplinary Conference, Montreal QC (June 14,
2015) “New Technologies Using the Adapted Use Musical Instrument”
- 2015 Karlax and DMI Workshop, Montreal QC (May 4, 2015) “Designing
Digital Musical Instruments to Support Ensemble Interaction”
- 2014 University of California, Irvine (February 20, 2014) “Composing Height,
Depth, and Width”
- 2014 University of California, Irvine (February 20, 2014) “Workshop on dance
and the Prosthetic Instruments; exploring choreography of new gestures
for generating sound”
- 2014 University of California, Irvine (February 19, 2014) “Fitting Shapes to
Bodies: Design for Fabrication of the Prosthetic Instruments”
- 2014 University of California, Irvine (February 19, 2014) “Sensor Signal
Processing in Max/MSP as used in the Prosthetic Instruments”

Artistic Presentations

- 2019 – Present **FaMLE: The MIT Laptop Ensemble**
Boston Algorave Cambridge, Massachusetts – October 18, 2022
The Wires that Bind Us Cambridge, Massachusetts – April 21, 2022
Ukrainian Relief Concert Cambridge, Massachusetts – April 3, 2022
The Meaning of Live Cambridge, Massachusetts – December 3, 2021
Global Scope Online – May 20, 2021
Digital Environments with the Jamaica Plains Sax Quartet. Online – April 24, 2021
Kon-cert Online – December 1, 2020
Algorave Online – May 12, 2020
360 Degrees of Separation Online – April 29, 2020
Dissolve @ MIT: Spatial Sound Festival, Cambridge, Massachusetts – February 18, 2020
Rainforest 404, Cambridge, Massachusetts – December 10, 2019
Hacking Arts Festival, Cambridge, Massachusetts – December 8, 2019
Indigenous to the Net: a concert of collaborative electronic music Cambridge, Massachusetts – November 21, 2019
- 2022 **Space Invaders.** Live set at spatial audio concert series
Union Tavern Somerville, MA, May 18, 2022
- 2021 **Engineered Expression.** Concert and colloquium featuring professional Digital Musical Instrument designers.
Concert Online, May 7, 2021
Colloquium Online, May 8, 2021
- 2018 – 2019 **Spider's Canvas / Arachnodrone.** Immersive digital performance with Evan Ziporyn, Christine Southworth, and Isabelle Su.
Palais de Tokyo Paris France – November 23, 2018
MIT W97 Cambridge, Massachusetts – February 16-18, 2019
Cambridge Science Festival Cambridge, Massachusetts – April 16, 2019
- 2016 – 2017 **Haptic Fields.** Immersive art installation by Chris Salter and Tez in collaboration with Ian Hattwick.
Muffatwerk Munich Germany – November 16-19, 2017
Berliner Festspiele, Martin Gropius Bau, Berlin, Germany – July 1-31, 2017
Wiener Festwochen Vienna, Austria – June 15-18, 2017
Chronus Art Center Shanghai, China – July 9 - September 4, 2016
- 2014 – 2015 **Ilinx.** Immersive art installation by Chris Salter, Tez, and Valerie LaMontage, technology direction by Ian Hattwick.
TodaysArt.jp Tokyo, Japan – September 5-13, 2015
HAU3 / CTM Berlin, Germany – January 29 - February 1, 2015
TodaysArt 2015 the Hague, the Netherlands – September 25-28, 2014
- 2014 **Almost Human.** Composition for cellist and prosthetic instrument, performed by Seth Woods, composed by Ian Hattwick and Seth Woods.
 New Interfaces for Musical Expression Conference London, England –

- July 2, 2014
- 2014 **Unsounding Objects.** Composition for Spectrasurface, performed by Zachary Hale, composed by Preston Beebe, instrument design by Ian Hattwick. New Interfaces for Musical Expression Conference London, England – July 1, 2014
- 2014 **Heliotubes.** Composition for percussion quartet, performed by Architek ensemble, composed by Ian Hattwick Centre for Interdisciplinary Research in Music Media and Technology Montreal, Quebec – February 13, 2014
- 2013 **Les Gestes.** Choreography-concert, created by Van Grimde Corps Secrets, Sean Ferguson, and Marlon Schumacher, instrument design by Joseph Malloch and Ian Hattwick.
Agora de la Danse Montreal, Canada – March 13-16, 2013
Schouwburg Arnhem, the Netherlands – April 10, 2013
Forum du Blanc Mesnil Paris, France – April 13, 2013
Concertgebouw Bruges, Belgium – April 18, 2013
- 2010 **Talking Bowls.** Art Installation by Ian Hattwick. *Beall Center for Art + Technology* Irvine, California – June 3-11, 2010
- 2010 **Architextures.** Dance performance, choreography by Randall Anthony Smith, music by Ian Hattwick *University of California, Irvine* Irvine, California – December 2-4, 2010

FIELDS OF INTEREST

Music Technology
 Digital Musical Instrument Design
 Hardware and Software Systems for Multimedia Performance
 Collaborative Musical Performance Practices
 Electronic Music Performance

PROFESSIONAL ORGANIZATIONS AND SERVICE

Intermedia Mapping and Scripting Special Interest Group, MIDI Manufacturers Association (MMA)

MIT ACTIVITIES AND COMMITTEES

Departmental and School activities and Committees

2021 – Present Director, Voxel Lab Music & Art Makerspace
 2019 – Present Director, FaMLE Laptop Ensemble

2019 – Present Music Building Committee

PUBLISHED MATERIALS

Articles in Refereed Journals

2022 Su, I., Hattwick, I., Southworth, C. et al. “Interactive exploration of a hierarchical spider web structure with sound.” *Journal on Multimodal User Interfaces* 16, 71–85.

Submitted Conference Papers

2022 Knappe, S., Hattwick, I. “Sensing String Displacement as a Control Modality in DMIs”. *New Interfaces for Musical Expression*, (submitted).

Invited Conference Papers

2017 Hattwick, I., Franco, I., and Wanderley, M. M. (2017). “The Vibropixels: a Scalable Wireless Tactile Display System.” In: *Proceedings of the 19th International Conference on Human-Computer Interaction*. Vancouver, Canada.

2017 Ignoto, P., Hattwick, I., and Wanderley, M. M. “Development of a Vibrotactile Metronome to Assist in Conducting Contemporary Classical Music.” In: *Proceedings of the International Conference on Applied Human Factors and Ergonomics*. Los Angeles, CA.

Peer-reviewed Conference Papers

2022 Roberts, C, Hattwick, I., et. al. “Rethinking collaboration in a networked live coding environment”. In: *Proceedings of the International Conference on New Interfaces for Musical Expression*. Auckland, New Zealand.

2019 Hattwick, Ian. “Performer experiences of shared agency in networked music performance”. In: *Proceedings of the NowNet Arts Conference*. Stony Brook , NY.

2017 Hattwick, I., and Wanderley, M. M. *Design of Hardware Systems for Professional Artistic Applications*. In: *Proceedings of the International Conference on New Interfaces for Musical Expression*. Copenhagen, Denmark.

2015 Hattwick, Ian, Ivan Franco, Marcello Giordano, Deborah Egloff, Marcelo M. Wanderley, Valerie Lamontagne, Ian Arawjo, and Maurizio Martinucci. “Composition Techniques for the Ilinx Vibrotactile Garment.” In: *Proceedings of International Computer Music Conference*. Denton,

- Texas, USA, pp. 420-423.
- 2015 Hattwick, Ian and Marcelo M. Wanderley. "Interactive Lighting in the Pearl: Considerations and Implementation". In: Proceedings of Conference on New Interfaces for Musical Expression. Baton Rouge, LA, USA, pp. 201-204.
- 2015 Lamontagne, Valerie, Ian Hattwick, Ivan Franco, Marcello Giordano, Deborah Egloff, Maurizio Martinucci, Chris Salter, and Marcelo M. Wanderley. "The Ilinx Garment: Whole-body Tactile Experience in a Multisensorial Art Installation". In: Proceedings of the International Symposium on Electronic Arts. Vancouver, British Columbia, Canada.
- 2015 Giordano, M., I. Hattwick, I. Franco, D. Egloff, E. Frid, V Lamontagne, Tez, C. Salter, and M.M. Wanderley. "Design and Implementation of a Whole Body Haptic Suit for 'Ilinx', a Multisensory Art Installation". In: Proceedings of the Sound and Music Computing Conference. Kildare, Ireland, pp. 169-175.
- 2014 Hattwick, Ian, Joseph Malloch, and Marcelo M. Wanderley. "Forming Shapes to Bodies: Design for Manufacturing in the Prosthetic Instruments". In: Proceedings of the International Conference on New Interfaces for Musical Expression. London, England, pp. 443-448.
- 2014 Hattwick, Ian, Seth Woods, and Marcelo M Wanderley. "Almost Human: Moving Expressive Gesture from Cello to Spine." In: Proceedings of the Workshop on Practice-Based Research in New Interfaces for Musical Expression. London, England.
- 2013 Winters, R. Michael, Ian Hattwick, and Marcelo M Wanderley. "Emotional Data in Music Performance: Two Audio Environments for the Emotional Imaging Composer". In: Proceedings of the 3rd International Conference on Music & Emotion, Jyväskylä, Finland.
- 2013 Hattwick, Ian, Preston Beebe, Zach Hale, Marcelo M. Wanderley, Phillippe Leroux, and Fabrice Marandola. "Unsounding Objects: Audio Feature Extraction for Control of Sound Synthesis in a Digital Percussion Instrument". In: Proceedings of the International Conference on New Interfaces for Musical Expression. London, England, pp. 597-600.
- 2012 Hattwick, Ian and Kojiro Umezaki. "Approaches to Interaction in a Digital Music Ensemble". In: Proceedings of the International Conference on New Interfaces for Musical Expression. Ann Arbor, Michigan, USA.
- 2012 Hattwick, Ian and Marcelo M. Wanderley. "A Dimension Space for Evaluating Collaborative Musical Performance Systems". In: Proceedings of the International Conference on New Interfaces for Musical Expression. Ann Arbor, Michigan, USA.
- 2012 Hattwick, Ian and Kojiro Umezaki. "An Approach to Collaborative Performance in a Digital Music Ensemble". In: Proceedings of the 1st Symposium on Laptop Ensembles & Orchestras. Baton Rouge, Louisiana, USA, pp. 109-110.

Open-Source Software

- 2022 *Gibber Resources*, Javascript library for extending Gibber.cc.
- 2021 *Nobby_MIDI2.0*, Python exploration of MIDI 2.0.
- 2021 *ControlVoltage*, C++ Arduino library to generate signals for use with modular synthesizers.
- 2020 *autoMITonis*, extension of the Automatonism PureData library.
- 2020 *LP*, Max/MSP tools for working with the Novation Launchpad.
- 2019 *NIME*, Python and PureData support for designing DMIs.
- 2019 *MLE*, Max/MSP and Node.js library for computer music ensemble compositions.

Audio Recordings

- 2022 Paula McMath, *Totems*. Production, Guitar.
- 2011 Chris Dobrian, *Cycles (Interrupted)*. Audio Engineering, Mastering.
- 2009 Paula McMath, *Trust the Sky*. Production, Audio Engineering, Guitar.
- 2007 Ian Hattwick, *Christmas Snowfall*. Production, Audio Engineering, Arrangements, Guitar.
- 2007 Ian Hattwick, *IH2*. Composition, Guitar, Production.
- 2006 Ian Hattwick, *Retrofunk Instruments*. Composition, Guitar, Production.
- 2006 Ian Hattwick, *Handwritten*. Composition, Guitar, Production.
- 2005 Insidium, *Exit Terra*. Composition, Synth, Production.
- 2004 Insidium, *Organic Mechanic*. Composition, Synth, Production.
- 2003 Ian Hattwick, *Stellar*. Composition, Guitar, Production.
- 2001 Tanj, *Action/Reaction*. Composition, Guitar, Production.

UROPS

- 2019 Carina Masuelli, "Updating the MOSS System for Contemporary Recording Practice"
- 2019 Julian Hamelberg, "Python exploration of MIDI 2.0"
- 2019 Anthony Nardomarino, "Euro-rack Analog Synthesis Dev-kit Development"
- 2019 Carina Masuelli, "Composition for Laptop Ensemble"

SERVICE

International Symposium on Electronic Art (2020) Reviewer

New Interfaces for Music Expression Conference (2018) Reviewer

Fashion Tech Fest (May 26-28, 2017) Expert tech mentor for the Fashion Tech Fest and Hackathon, Montreal, Quebec.

Workshop on Max for Live (March 23, 2016). Organized a full-day workshop at the Centre for Interdisciplinary Research in Music, Media, and Technology.

International Computer Music Conference (2015-2017) *Reviewer*

IEEE Transactions on Machine-Human Interaction (2013) *Reviewer*

International Institute for Critical Studies in Improvisation Conference (June 9-14, 2014). Produced three concerts in collaboration with Suoni Per Il Popolo and the International Institute for Critical Studies in Improvisation. Performers included George Lewis, John Butcher, John Tilbury, Sandeep Baghwati, and Michael Young.

New Electric Jazz Music Series (2006). Co-producer, new music concert series at Club Tropicale, Culver City, California.

Progress Music Series (2005). Co-producer, performance series at the Overlook bar, Los Feliz, California.

LIST OF THESES SUPERVISED

MEng

2022 – Present	Savoldy, "Live Coding Interface for MIDI Instruments"
2021 – 2022	Silvia Knappe, "Sensor for measuring string displacement in Digital Musical Instruments"