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Summary

I create hardware systems for artistic performance, working closely with artists to create multimodal visual, sonic, and tactile experiences. Some systems I've created include prosthetic ribs worn by dancers, clothing which creates vibrations moving up your arms and legs, robotic drum ensembles which respond to your playing, musical instruments which allow you to draw sounds in the air, and many more. More than just being fun and engaging to use, these systems use a combination of movement, sound, touch, and light to create rich, embodied social experiences.

In order to get these systems out in the world I pay special attention to manufacturability throughout the design process. While thousands of people in Europe, North America, and Asia have seen or used my systems in performances and art installations, I am currently looking for opportunities to refine my designs for commercial production in order to make them available to a wider community.

My interests are derived from my experience as a performing guitarist - you can find music I've been involved with on spotify, itunes, etc.

Experience

How Max Became Live

Researcher

In collaboration with researchers from the fields of Media Studies and Music Theory I conducted research into the effects of interface design on the transmission of aesthetics, knowledge, and culture.

MONTREAL, QUEBEC

June '15 – May '16

Haptic Fields

Technical Direction

Haptic Fields is an interdisciplinary collaboration between researchers at McGill and Concordia Universities in which we've created interactive haptic devices to help answer questions regarding the social contexts of tactile sensations. I oversaw a team of researchers in the electronic and mechanical design of the devices, embedded programming of the devices, and the creation of a software API for control of the devices.

MONTREAL, QUEBEC & SHANGHAI, CHINA

May '15 – present

Sensory Entanglements

Technical Direction

This interdisciplinary project brings together new media artists, anthropologists, and computer interface designers to collaborate on research into the ways in which cultural backgrounds influence the ways the senses are understood. The project will culminate in an artistic exhibition by artists from both European and Indigenous Canadian and Australian backgrounds, as well as publications analyzing the creation, dissemination, and context of the exhibition. My role is the creation of a platform for creating multimodal computer interfaces utilizing interactive lighting, tactile effects, and control of audio processes. The interfaces created for this platform will be used to control VR installations as well as multisensory artistic installations.

MONTREAL, QUEBEC & SYDNEY, AUSTRALIA

Dec '14 – present

Additive Design of Digital Musical Instruments

Researcher

In collaboration with industrial partner Cimetrix Solutions I researched applications of 3D printing technologies for the creation of digital musical instruments, focusing on the integration of mechanical design and electronic sensors.

MONTREAL, QUEBEC AND OSHAWA, ONTARIO

Jan '14 – June '14

The Pearl

Computer Interface Design

I created an interactive multimodal interface for a multi-disciplinary theatrical work.

MONTREAL, QUEBEC AND LILLES, FRANCE

Nov '13 – Mar '14

Disequilibrium

Technical Direction

For this project we created a tactile-enhanced full-body garment which has been used in a multi-sensory art installation staged in The Hague, Berlin, and Tokyo. In my role of technical director I oversaw a team of researchers and scientists in the creation of the electronics and software systems, which were then integrated into a garment designed by a Montreal clothing designer.

MONTREAL, QUEBEC AND AMSTERDAM, THE NETHERLANDS

Sept '13 – Sept '14

- Control Strategies for a Human-Conducted Quadcopter Ballet
Programmer, Composer MONTREAL, QUEBEC
June '13 – May '14
In coordination with researchers from Concordia University I conducted research into strategies by which a human musician can control the trajectories of an autonomous quadcopter in a real-time performance.
- Suoni Per Il Popolo MONTREAL, QUEBEC
Producer Mar '13 – June '13
Managed and produced a series of concerts for the Montreal experimental music festival Suoni Per Il Popolo. Duties included coordination with facilities management, obtaining of performance licenses, and stage direction during the events.
- Mcgill University MONTREAL, QUEBEC
Lecturer Sept '12 – May '15
Co-taught two Music Technology undergraduate courses, Fundamentals of New Media and New Media Production II. Subjects covered include fundamentals of music perception and cognition, digital music transcription, audio engineering, and audio and video programming in Max/MSP.
- Unsounding Objects MONTREAL, QUEBEC
Hardware and Software Design May '12 – May '14
Designed a musical instrument which uses audio feature extraction algorithms to generate appropriate controls for sound synthesis processes.
- Mcgill University MONTREAL, QUEBEC
Teaching Assistant Jan '12 – May '15
Assisted in a variety of music technology and general music courses, including Introduction to Digital Audio, Fundamentals of New Media, a survey course on Western Music History.
- Les Gestes MONTREAL, QUEBEC
Hardware Design Sept '11 – May '13
I co-created the Prosthetic Instruments, a family of controllers in the form of prostheses worn by dancers in an interactive choreography-concert. 32 different instruments were created and used on tour in Canada and Europe in the Spring of 2013. Media coverage of the instruments included articles in The Guardian, Radio Canada, CNET, Wired UK, etc.

Please refer to my [website](#) for a complete list of projects, including hardware design, audio engineering, and music performance.

Education

- McGill University MONTREAL, QUEBEC
Ph.D. in Music Technology 2011 – 2016
Primary work consisted of research into design and manufacturing of technologies for use in professional artistic productions.
- University of California, Irvine IRVINE, CALIFORNIA
MFA in Integrated Composition, Improvisation, and Technology 2009 – 2011
- University of Southern California LOS ANGELES, CALIFORNIA
BM in Jazz Studies 1993 – 1999

Skills

Technical expertise: Project management and coordination with a variety of collaborators from different disciplines. I'm extremely aware of the need to meet the goals of all the project members while working within strict deadlines and high-pressure performance environments. While my main focus is on the development of embedded hardware, I am able to take a project from its initial conception through to professional electronic and mechanical fabrication, firmware development, and application programming and support. Core skills: mechanical design (Solidworks, AutoCad, digital fabrication using 3D printers, lasercutters, etc., moulding and casting of resins and silicones), electronic design and fabrication (CadSoft Eagle, SMD design and fabrication), application programming (C++, Max/MSP, Processing), production management of outsourced mechanical and electronic fabrication.

Interests

tai-chi, science fiction, jazz, electronic music, cooking, analog guitar FX, woodworking, generative art