

CIRMMT Inter-Centre Research Exchange Report

Student: John Sullivan

Location: Augmented Instruments Laboratory, Center for Digital Music (C4DM), Queen Mary University, London, UK

Exchange Supervisor: Andrew McPherson, director, Augmented Instruments Lab

CIRMMT Supervisor: Marcelo Wanderley

Dates: April - May 2018

For this research exchange I traveled to Queen Mary University in London for five weeks to begin work on a collaborative research project I had proposed to colleagues at the Augmented Instruments Lab in the Center for Digital Music (C4DM). The project, with lab director Andrew McPherson and postdoctoral researcher Fabio Morreale, is centered around analysis of our related surveys on performance with new digital musical instruments (DMIs). Drs. McPherson and Morreale recently conducted a survey of designers who had presented new instruments at the New Interfaces for Musical Expression (NIME) conference, in which they investigated how these instruments had been designed for, and adopted into, long term use in performance. Separately at the IDMIL (Input Devices and Music Interaction Laboratory, McGill), I have carried out an online survey of musicians who use electronic musical instruments in performance. This survey is aimed at understanding differences between performance communities' choice of electronic and digital instruments, and factors around the uptake, continued use, and abandonment of new technologies for use in performance. Of particular interest is diversity in musical styles and performance practices. Given the similar topic and research methods between our surveys, especially our use of grounded theory-based qualitative analysis techniques, we were interested to review our results side by side and investigate how we could combine and extend our efforts towards the formulation of guidelines for design of performance-ready DMIs.

The basis for this collaborative work is centered around the observation that new DMIs often experience little use beyond their initial build and demonstration. In Morreale and McPherson's survey of designers in the NIME community they found that new instruments were most frequently designed in research and academic contexts, and their use in performance was often secondary to other priorities like testing new technologies and materials, and conducting experiments and studies. Furthermore, they found that even when instruments had been built specifically for performance, they were often abandoned within a few months or a few years due a variety of factors like loss of interest, being replaced by a new or better instrument, or mechanical failure. Similarly, in a previous user survey of my own, respondents from a wide variety of musical practices reported several factors that would deter them from long-term use of an instrument, including maintenance and instrument failure, interest in newer technologies, and a lack of compatibility with other equipment, performers and industry standards.

During my time at the Augmented Instruments Lab, I worked with Dr. Morreale to review our individual analysis approaches and formulate a combined approach that we could apply to both of our surveys. This allowed us to compare our findings, and has revealed some valuable insights and indications for future work. A main observation comes from the

distinction between two different groups of performers. From Morreale and McPherson's survey, respondents were mainly from academic and experimental music performance communities, whereas my own survey results come more from non-academic, pop and electronic dance music communities. There are stark differences between the types of instruments and technologies the two groups use, the ways in which they perform, and specific considerations, concerns, and preferences they exhibit in their use of DMIs in performance.

Based on the consolidated findings, we have planned our continued work to conduct interviews with respondents from both surveys. In September I will return to London to meet with Drs. Morreale and McPherson and review the results of our interviews and analysis. We will assess whether we are ready to publish our findings or will conduct another focused survey together. As a final outcome of this project, we intend to co-author a journal publication that presents our findings and new guidelines for the design of DMIs intended for long-term use. Our contribution will take into account the broad variety of performance practices and communities, and aims to provide a roadmap for designers to consider the wide diversity between these groups.

This project provides the theoretical basis for a new instrument design and evaluation study I am currently starting, and is an essential part of my ongoing dissertation work. I would like to express my thanks and gratitude to CIRMMT for their financial support of this exchange, and the guidance and support of supervisors and collaborators Marcelo M. Wanderley, Andrew McPherson, and Fabio Morreale.