

DOCTORAL THESIS

A portfolio of original compositions and an investigation into the use of gestures and controllers in computer-based electroacoustic music

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Abstract

Most musical instruments have undergone evolution over several hundred years. The pursuit of excellence in instrument building helps instruments in meticulously translating musicians's movement and gesture into sound. Musicians spend much of their time perfecting their movements and gestures to achieve the desired sound and expression.

Digital technologies brought new perspective and possibilities to this performer-instrument relationship by detaching the tight relationship between gesture used and sound produced. This relationship can then be re-created with almost no restrictions, and composers have freedom to design their own controller or electronic instrument.

The intention of this thesis is to further the development of gestural controller usage by understanding the evolution that has lead to the current trends in their use; how this evolution may inform newer development, and creating two new interactive systems for informed by the above. It also consists of a discussion of problems and challenges in interface building in terms of art and design.

To demonstrate proficiency in traditional compositional genres, the first half of this dissertation consists of a composition portfolio. The second part of this dissertation is an investigation into the use of gestures and controllers in interactive electroacoustic music.

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