

Collaborative cross-domain real-time score generation and performance

It is natural for the human imagination to think creatively across domains: many people can imagine at will music to accompany a set of actions and yet the technical understanding of this is not so clear. There is evidence that cross-domain thinking is at the heart of much creative activity and this practice-based research attempts to exploit this hypothesis.

The workshop will be presented by composer and performance technologist Richard Hoadley and choreographer and dancer Jane Turner. Their recent collaborations include *Quantum Canticorum* and *The Fluxus Tree* which investigate physical interaction and performed music notation. These technologies were also successfully demonstrated to the public at the recent Universities' Week at the Natural History Museum.

Using bespoke and proprietary data acquisition technologies and cutting-edge computing, the workshop investigates relationships between domains, in particular dance and music. It will also reference other contemporary examples including Laetitia Sonami's *Lady's Glove* and Marije Baalman's *Wezen Gewording*. Works such as these do more than modulating sound with movement; they use many-to-many algorithms and gestures to generate identifiable but non-identical renditions emulating natural performance.

This workshop also adds a less explored dimension of algorithmically generated notation in addition to synthesised audio, allowing for interpretation and synchronisation between multiple performers and audio events. Crucially it utilises performers' learned motor skills to create vibrant live performance that cross-fertilises compositional processes with improvisation and spontaneity.

The event illuminates the conference objectives of creativity, playfulness and improvisation by offering a workshop where these relationships are laid bare. It provides a unique insight into the difference between the cross-domain relationships of our imaginations and real, functional implementations. It tests these differences and proposes methods of overcoming and exploiting them.

The workshop will include a brief history of electronic interaction. There will be a series of demonstrations and performances during which participating dancers will experiment with movement, spatial positioning, and simple gestures to produce interpretable sonic environments, performed in real-time by the musicians, themselves experimenting with a performing environment that is both familiar and novel.

Of key importance will be a demonstration of the technology's possibilities, challenges and potential for continued research, and how it remains entirely necessary to learn and practice with these environments as is the case with any musical instrument. The workshop will define the role of technology in cross-domain creative work, considering the aesthetic and creative possibilities while providing technical implementations enabling real-world experimentation in this cutting-edge field.