

Interactive Music Software

Developing music technology for an interactive exhibition.

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The purpose of this presentation is to describe the development of software (iMusic) for interactive music and how it has evolved as a result of being used in an interactive exhibition - Nobel Creations.

I developed iMusic 2013 to serve as prototyping tool and test bench for teaching interactive music at the Royal College of Music in Stockholm. Since then, more than 50 music production students have used iMusic in different projects where Nobel Creations plays the most important part. I have myself been responsible for the software development and the students have given valuable feedback for the design of new features. They have also had a great impact on the API to make it well suited for composers with little or no experience of programming.

Nobel Creation was an interactive exhibition in Stockholm where students from different disciplines and universities interpreted the Nobel price in music, design, photography and handicraft. There were two types of music in Nobel Creations. Six songs, interpreting each Nobel price, composed by Jazz students. Those songs could be listened to through headphones. There was also an interactive music installation composed and produced by students at the Master's Programme in Music Production. The music installation was built of a continuous soundscape played back through two sets of stereo speaker and two sub woofers. There were also 12 speakers with discrete channels of musical phrases triggered by the visitors' movements captured by IR-sensors and interaction with iPads and buttons. This study was done 2014, 2015 and 2016 and focused only on the interactive music and its relation to the technology. Every year, the music was playing every day for three months starting the first week in December.

When choosing technology there was an option to either use existing solutions like Ableton Live (with max for live), Wwise, Fmod, Elias or to build something new. To gain knowledge about how the composing and production process could be leading the innovation of new music software, we formed a research project and went for the latter.

To facilitate interactive music in Nobel Creations, lots of features have been added to the software. iMusic is similar to products built for game music but differs in some ways. I would argue that many of the innovations and features would not have happen if it weren't for the iterative process between the composers, the programmer and the exhibition itself. The engine has a focus on composer controlled, randomized playback, which supports the need for endless music during the exhibition. Another result of the project is the implementation of motifs (musically synchronized phrases) with features supporting the triggering of phrases in a musically controlled context regarding chords, dynamics and time signatures.