

The Sound of Music

COMPUTING

Wednesday 14th December 2016.
Doors open at 5pm for a 5.30pm start.
Ends 6.30pm followed by reception

**Find out how computing is extending
and transforming the acoustic
instruments that people have
been playing for centuries.**

The lecture will be followed by drinks and mince pies.

Attendance is free, but please register
in advance – see website for details.

eecs.qmul.ac.uk/sound-of-computing

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The design of the acoustic piano has scarcely changed in more than a century. Now, computers are being used to transform the sounds and techniques of this familiar instrument.

Your host



Andrew McPherson is a Reader in Digital Media at Queen Mary University of London. He is a member of the Centre for Digital Music (C4DM), a research group in the School of Electronic Engineering and Computer Science which explores the overlap between music and computing. Andrew completed a Master's degree in electrical engineering from the Massachusetts Institute of Technology and a PhD in music composition from the University of Pennsylvania. Before joining QMUL in 2011, he was a postdoc in the Music Entertainment Technology Laboratory at Drexel University. His research covers digital and augmented instruments, embedded computing systems, and the study of performer instrument interaction. Within C4DM, he leads the Augmented Instruments Laboratory, a team whose projects have been featured in two successful Kickstarter campaigns, concerts in high-profile venues including the Barbican Centre and Cadogan Hall, and over two dozen media articles. More information on Andrew's work can be found at: www.eecs.qmul.ac.uk/~andrewm



The magnetic resonator piano (MRP)

is an augmented instrument which places electromagnets inside an acoustic grand piano. The electromagnets cause the strings to vibrate without being struck with the hammers, creating notes that can sustain indefinitely, grow out of silence, or change in pitch or timbre. All sound is completely acoustic, with no speakers.

The MRP is played from the piano keyboard using a combination of familiar and new techniques. The instrument uses a computer to translate key motion into signals for the electromagnets, but playing it, you wouldn't know that a computer is involved: pressing the keys causes the strings to sound, just like on a normal piano. But unlike a normal piano, you can continuously shape the sound of each note, adding vibrato, pitch bends, harmonics and other novel effects. The result sounds like a combination of a piano, an organ and a glass harmonica.

There will be a live demo of the MRP during the presentation, and it will be available after the talk for attendees to try for themselves. A video demo can be found at: <http://bit.ly/1f1LLMU>

