

Digital music: application, impact, new industries and business models

Centre for Digital Music, Queen Mary University of London

Meeting Global Challenges

The Centre for Digital Music (C4DM) at Queen Mary University of London is a world-leading multidisciplinary research group in the field of Music & Audio Technology. Since its founding members joined Queen Mary in 2001, the Centre has grown to become the UK's leading Digital Music research group. With its broad range of skills and a strong focus on making innovation usable, the Centre for Digital Music works with industry leaders in forging new business models for the music industry with significant economic impact.

A Multidisciplinary Approach

We emphasize adventurous and trans-disciplinary research, pushing the boundaries of digital signal processing, computer science, philosophy and psychology. Our projects span many different disciplines, including live performance, software engineering, musicology, semantic web, knowledge processing, and interaction – bringing together computer scientists, musicians, engineers and social scientists. We investigate topics such as music information retrieval, music scene analysis, semantic audio processing, object-based audio coding, human machine interaction and digital performance.

Most of our research targets real users, seeking to build new algorithms into usable and useful software, realizing both that with public funding we have a duty to take research results to the wider public, and also that their engagement with us helps to take our research in new directions.

Research Impact

Digital Music is a rapidly growing research area, driven both by the musicological community and by commerce, such as iTunes and Shazam. With its broad range of skills, the Centre for Digital Music works with industry leaders to forge new business models for the music industry. Music is not simply a commodity to be delivered to consumers, but is also a medium for creative expression and social interaction: people do not merely “consume” music but “engage” with it. We are now in a position to explore possibilities of technologically-enabled interaction through music. Technology and research tools open up possibilities for non-traditional creation through music, particularly for the majority of people who do not use common music notation.

In addition to industrial/commercial users, a large and important user group for our research includes nontechnical or amateur-technical users with a creative background, such as performers, composers, sound artists and musicologists. To connect to these stakeholders we need to go further than usual in making our research more accessible, through provision of user interfaces, visualizations and plug-ins for software used by this group so that they can immediately appreciate and use the new research techniques that we have created.

Funding Sources

Research funding obtained since 2001 totals over £5.8m, from the EPSRC, EU, Royal Society, Leverhulme Trust, Nuffield Foundation, Mellon Foundation and industry. Since the start of 2004 we have begun 11 new EPSRC projects and 3 new European projects. One of our most recent awards is Online Music Recognition and Searching 2.0. (OMRAS-2) valued at £2.5m, is the first EPSRC ICT “Large Grant”. This project is in collaboration with Goldsmiths, King's College London, Royal Holloway and Lancaster University, with C4DM as the lead partner.