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# Musical Intersections across the Digital and Physical

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Music; experiences; mobile; sensors; digital objects

## INTRODUCTION

Digital musical experiences are commonplace, everyday occurrences for many of us. Digital technologies facilitate where, how and what we access, and they increasingly offer new methods for capturing, sharing, enhancing and supporting such musical experiences.

Presented here is a sample of distinct research activities where we have engaged with a cross section of digital tools to augment novel musical experiences in the physical world, harnessing the mobile and the tangible.

## LOCATION, LOCATION, LOCATION-BASED MUSIC

Humans regularly curate their own soundtracks to accompany and ‘aestheticise’ mobile activities [2], and artists and composers alike have utilized mobility and mobile sensors as a driver for the production and consumption of interactive mobile experiences [1, 3].

In response, we [5, 6] considered how composers might set about deliberately creating musical soundtracks to accompany location based experiences such as guided tours, cultural walks and mobile games. We took a film soundtrack approach where the music serves as an *accompaniment* to the narrative, so assumes a supporting role. In the case of location-based activities, the narrative is formed from a combination of a location’s topology and function. Through an artist led engagement at a cultural site [6] we developed a set of principles to guide the composition of GPS driven interactive soundtracks, that subtly enhance the experience and work effectively with locative technologies, whilst preserving a rich compositional practice. Primarily, the compositional principles construct a set of mappings between musical structure (melody, harmony, rhythm, timbre and dynamics) and spatial structure and user behaviours.

As with all location based experiences connectivity – of some type – is both a driver and often the breaker of the experience, particularly in remote areas. Complementary to the above is a developing project [4] that places ‘kiosks’ in-situ which provide access to locally related media content. Off-line web apps can be downloaded by users via WiFi to run on their smart devices. A current focus of this work centers on delivering digital music objects and the development of a dynamic, multi-track music player for location-based experiences.

## THE INTERNET OF (MUSICAL) THINGS

The emergence of the ‘Internet of Things’ seeks to transform our engagement with physical objects. Connected objects with extended digital histories can help verify their provenance, add interest and therefore value through stories of previous use and ownership. We worked with a graphic designer and guitar luthier to produce a hand-made guitar embedded with decorative patterns that use *Aestheticodes*, a novel approach similar to the QR code, where bespoke designs can be scanned using a mobile device to retrieve online or locally stored data. Through direct engagement with the physical object, performers and audience members can access and engage with the guitar’s history: such as details of its construction or recordings and videos of those who have played it. We feel this type of engagement adds value to the object and enhances users’ interaction with its history. Music memorabilia can have a powerful impact on the listening experience and the collection and sharing of objects related to bands and artists construct a rich narrative around the music that is valued and sought. On this theme, the GEMS project explores badges and patches embedded with technologies – such as the scannable *Aestheticodes* or RFID tags – that enable musicians to gift personalized musical experiences to their fans or peers, such as recordings, videos or information only accessible to those in possession of the object. This range of research projects shares a common set of research themes. These are to expand and enhance engagement with digital music, in order to understand and develop new interaction mechanisms that can support such engagement.

## CONCLUSION

In conclusion, we hope that by displaying this range of new and interesting interactional possibilities relating to the field of digital music and HCI that we have in some ways been able to display and encourage researchers, designers and practitioners to reflect upon the broad field that is digital music research.

## ACKNOWLEDGEMENT

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NB *As part of this poster presentation we could bring some demonstrations of this work.*

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