Abstract

The objective is to explore cross-disciplinary methods of converting musical terms for tactile interfaces, thus enabling people unfamiliar in creating music to be explorative through the development of novel musical interfaces.

The project involves working with designers, coders, engineers and musicians to translate musical terms for musical composition into a taxonomy that can be then converted into a physical interface or new musical instrument, e.g. zones of patterns, textured slider bars, different heights that contain different resistance.

The approach tests different print technologies incorporating 3D and 2.5D printing, and a range of materials, smells and textures. Surfaces need to quickly recognised in different conditions (eg. humidity, darkness), and tests a range of materials for haptic and sensory comfort.

Printing the Muses: Reimaging digital musical instruments through 2.5D printing

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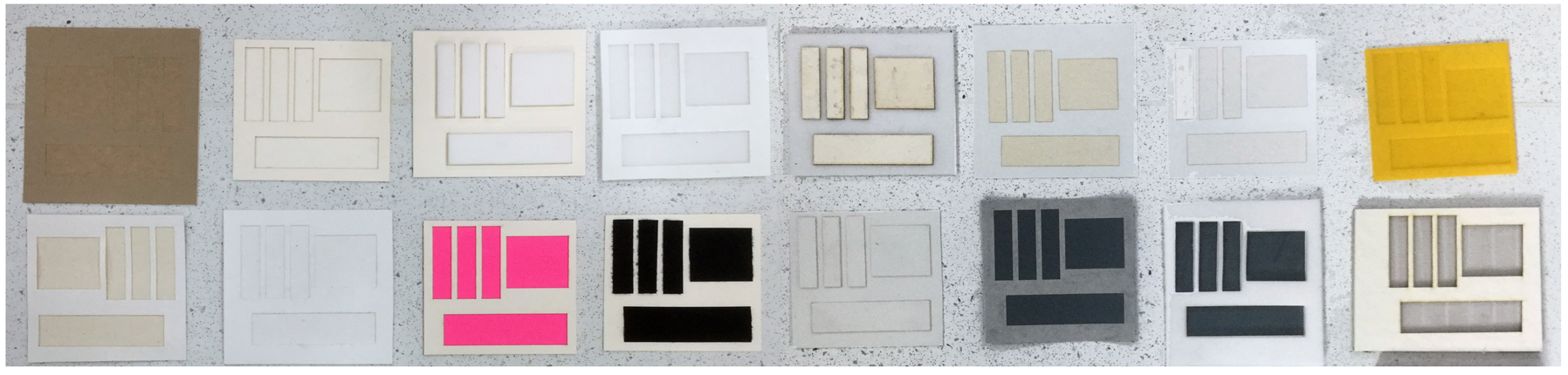
Motivation:
How can we re-imagine musical interfaces for a connected digital world as: 1) a new form of interface design, which acknowledges the user's part in both design and performance; 2) as an open resource and digital playground, though which digital instrument interaction and the Internet of Musical Things (IoMT), including distributed connected musical experiments. This project builds on new interfaces for musical expression (NIME) and scientific research exploring the role of new technologies in relation to musical expression, conceptualisation and artistic performance. In order to better understand the requirements and workflows for NIME, what interface, interaction, and haptic feedback would an artist design, if through the democratisation of technology?



Methods:
Using cross disciplinary methods for new tactile musical interfaces, we are exploring the combination of applied computer science and fine printing methodologies, alongside artistic and curatorial practices, new media approaches and Do-It-Yourself maker manufacturing. For our design and build of tactile interfaces for new musical expression, we have tested a range of printing and fabrication methods, for example, thermal swell paper, 2.5D UV curing hard and flexible inks, laser cutting, cast materials, and including low-cost touch sensor arrays.

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Muses - Digital Musical Instruments:
https://muses-dmi.github.io