

Mini Project proposal

PROJECT I

The aim of this projects is using hand drawn symbols (e.g. letters, shapes etc.) to control and manipulate meaningful sound and/or musical parameters. At a first attempt, it could be relevant to map a specific melodic or rhythmic structure to a specific shape and maybe create some interpolation between two boundaries then, that said a musical morphing.

The performer should be in front of the public and draw some figures using its hands, which would allow for a particular process after their recognition.

Further information on:

- *interaction*: hands/shapes/recognition/sound modification via some process;
- *technology* involved: Max 7 and some sensor to catch hands movement (e.g. built-in camera, Kinect, leap motion?)

Inspiration comes from:

- i) “Hand Composer”, a gesture-driven composition system framework (http://www.dei.unipd.it/~mandanici/papers/hand_composer.new.pdf)

PROJECT II

The aim of this projects is using extended piano techniques and Touch Keys technology to trigger a series of magnetic actuators that let a piano be played without any direct interaction (e.g. playing its keys). The performer should play a controller in order to provide the augmented piano with stimuli. Each specific technique could be mapped to a specific result (e.g. sound from silence, infinite sustain and/or different harmonics combinations).

Further information on:

- *interaction*: indirect interaction between player/mapping/amplification/magnets control;

- *technology* involved: Touch Keys for input information, magnetic actuators and amplifiers to let the piano produce sounds, software to map OSC from Touch Keys to voltage parameter (?)

(question: how to create microtonal pitch using only piano strings vibration?)

NB: this project comes from an original project of a `digital-prepared piano` in which a series of magnets/actuators should have been used to get physical information from strings and use it to drive a digital process which would have been returned and amplified using actuators placed in different positions onto the harmonic board. Unfortunately, due to the difficulty in finding a grand piano and building the electromagnetic structure, I really think it's better to provide a reformulation like the one above.

Inspiration comes from:

- i) Magnetic Resonator Piano project (<http://www.eecs.qmul.ac.uk/~andrewm/mrp.html>)