Social Systems for Improvisation in Live Computer Music

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Controller

(2014)

For 4 Laptop Performers

Duration: ca. 9 minutes

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Materials and System Requirements

Materials

- 4 Laptops
- Network Router
- Stereo PA
- Projector
- Connecting audio and video cables to PA and Projector from Laptop 1
- Connecting network cables to router from Laptops 1-4.

System Requirements

SuperCollider with GUI support running on any operating system
SuperCollider download link: http://supercollider.sourceforge.net/downloads/

BenoitLib must be downloaded from the following location: https://github.com/cappelnord/BenoitLib and added to your SuperCollider 'Extensions' folder.

Files

2 files are required to run the piece. 'Controller-Leader.scd' and 'Controller-Follower.scd'. These files are available via email to shelly.knotts@hotmail.co.uk.

- 'Controller-Leader.scd' should be run by Laptop 1 ONLY.
- 'Controller-Follower.scd' should be run by Laptops 2-4.

Instructions on how to run the files are contained within the files.

Performance Directions

Directions for Laptops 2-4

Run the code contained in the 'Controller-Follower.scd' file as directed within the file. This will produce a blank GUI which will be used to control the sound during the performance.

Directions for Laptop 1

Run the code contained in the 'Controller-Leader.scd' file as directed within the file. This will produce a blank GUI which will be used to control the sound during the performance and the audience visuals.

Run your laptop in double screen mode. Move the audience visuals window to the projector screen and set to fullscreen.

When you all performers are ready to begin the performance run the line `q.master_task.play(t)`.

Directions for all players

The GUI is used to control a shared sound space. Sound is run from Laptop 1 and all GUI element changes by any player affect the sound on Laptop 1. The GUIs are all linked over the network, so changing the value of, e.g., Fader 1 will change the value of Fader 1 for all players.

Over the course of piece the controls which are available to each player on the GUI will change according to a generative process.

The function of the GUI elements are as follows:

Faders: control the sound elements of the piece.
Buttons: change the availability of faders to other players. If you switch a button to the 'OFF' position that fader will be unavailable on the GUI of the player the button relates to until you or another player changes the button back to the 'ON' position.
Knobs: scale the frequency that slider values are received from the player the knob relates to. 100 = 100 messages per second. 1 = 1 message per second.

You will never be able to access the buttons and knobs which relate to your own faders.

The use of external devices such as MIDI controllers, motion tracking and touch screen devices for controlling GUI elements is not permitted. The GUI must be controlled with a computer mouse or touchpad.

Performers are encouraged to devise their own strategies for performing the piece.

Visuals

The audience visuals represent the current state of the GUIs of all players.

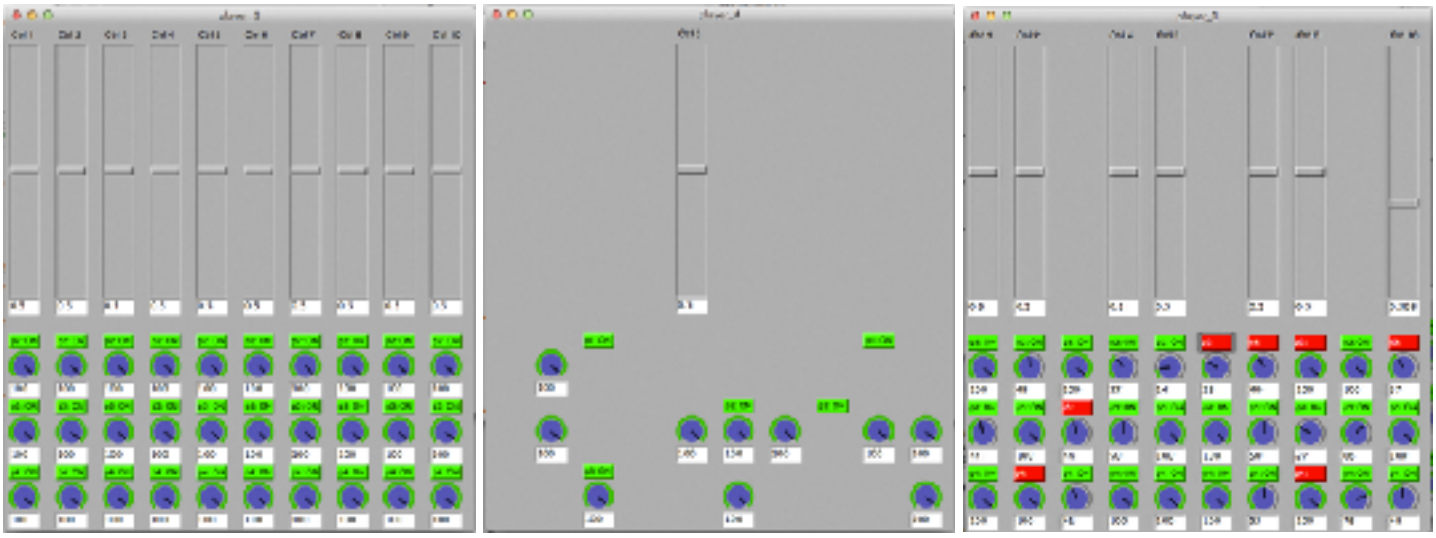


Figure 1 - Performer GUIs at different stages of the performance.
Left: complete GUI, Centre: GUI with algorithmically defined ‘access’, Right: Changing the access of other performers.

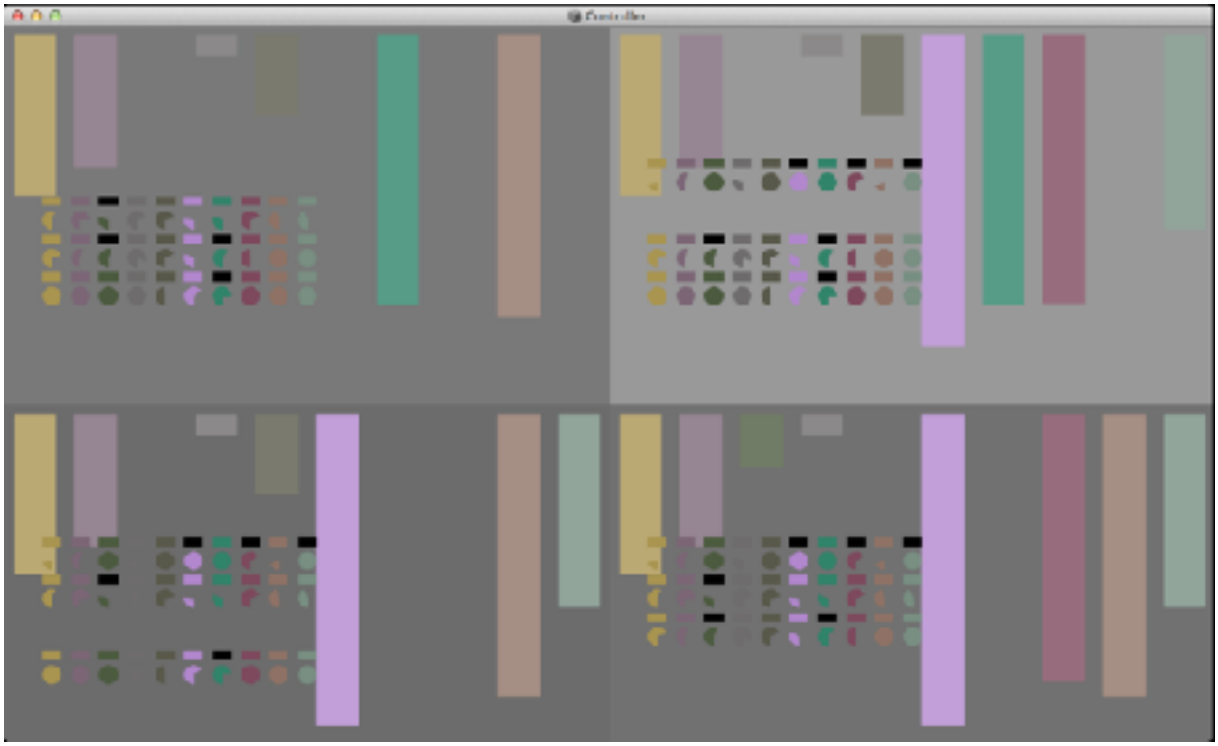


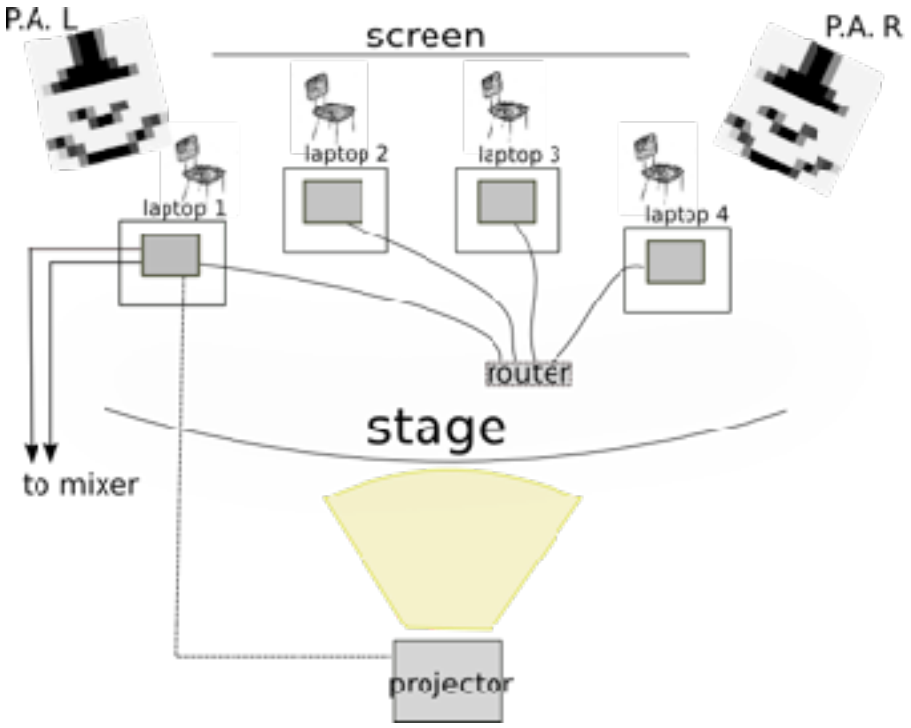
Figure 2 - Audience Graphic showing a representation of the current state of all performer GUIs.

Stage Layout

Audio routing:
Stereo audio output from Laptop 1 only
Laptop 1 Channel 1 -> P.A. L
Laptop 1 Channel 2 -> P.A. R

Video routing:
Video output from Laptop 1 -> Projector input

Network routing:
Ethernet connection from Laptops 1-4 to router



Programme Note

Controller (2014) is a work for laptop ensemble which explores the political dynamics of collective computer improvisation. Laptop ensemble composition provides many possibilities for facilitating democratic interactions among performers and many network music pieces use shared sound spaces or shared controllers to facilitate collective action. Controller comments on this democratic potential by providing an interface which varies during performance to vary the level of control of participants.

Performers are presented with a seemingly consensus based situation by means of (potentially) identical graphical interfaces on their laptop screens which control a shared sound space. However this democratic situation is subverted by giving the performers different levels of access to the performance interface - by means of changing the visibility of elements of the interface - and differing levels of difficulty of performing with the interface - depending on how fast elements of the GUI are changing. Later in the performance performers are able to change the visibility of elements on other players' interfaces creating a tension between the possibility of democracy provided by the network and hierarchical performance situations.

Controller brings to the foreground the complex underlying group dynamics of interaction, with an ongoing negotiation of 'who controls what'. The piece plays with the notion of creating a musical structure out of shifting group dynamics, with political action at the forefront of the compositional design.