DIGITAL VIDEO SYNTHESIS AND COMPOSITION WITH QUARTZ COMPOSER

Dave Payling

Contents

- Introduction

- Quartz Composer and Max / MSP

- *My compositional Practice*
- *Technical realisation of the studies and pieces*
- *Visual perspective*
- see previous talk for sound:
- 'Visually Inspired Visual Music from a Musician's Perspective'
- http://eprints.staffs.ac.uk/2276/

- Diffraction, Circadian Echoes, In Space, Line and Time Interactive Experiments

- With example Quartz Patches

Background

- Tutor at Staffordshire Uni
- *Currently post-doc looking for students to supervise*
- *Produce mainstream EDM*
- Looking at ways to combine the 'academic' with 'EDM'
- *Compose and research visual music (primarily fixed media)*
- *Past*
- (visual) history with Amiga Deluxe Paint and Brilliance
- sonification and auditory display with ICAD

- Teaching with Quartz
- *Music Awards / Music Students*
- Familiar with MAX MSP
- *Enjoy the similarities between MAX and Quartz*
- *See immediate visual improvements when using Quartz*
- But additional learning curve when increasing complexity of patches

Quartz Composer

- Mac Only

- Available free from the Apple developers site
- *https://developer.apple.com/downloads*

- A node based visual programming language for processing and rendering graphics
- *Similar to Max / MSP*
- *Objects connected together with 'noodles'*
- Other Uses
- *prototyping interfaces (such as Facebook) using Origami*
- https://facebook.github.io/origami/
- *OSX Screensavers*
- *Plugins for After Effects, Motion etc*
- *Quartz Programmes can be used directly in Resolume, VDMX and Serato (Mac)*

- This talk focus on OpenGL Synthesis
- *Quartz also has many video capabilities*

- **Will it be phased out???**

A Quartz Composer Patch

- 3 main object types

- **Consumer**
  - *Renders to a destination*

- **Processor**
  - *Processes input data*

- **Provider**
  - *Supplies data from an outside source*
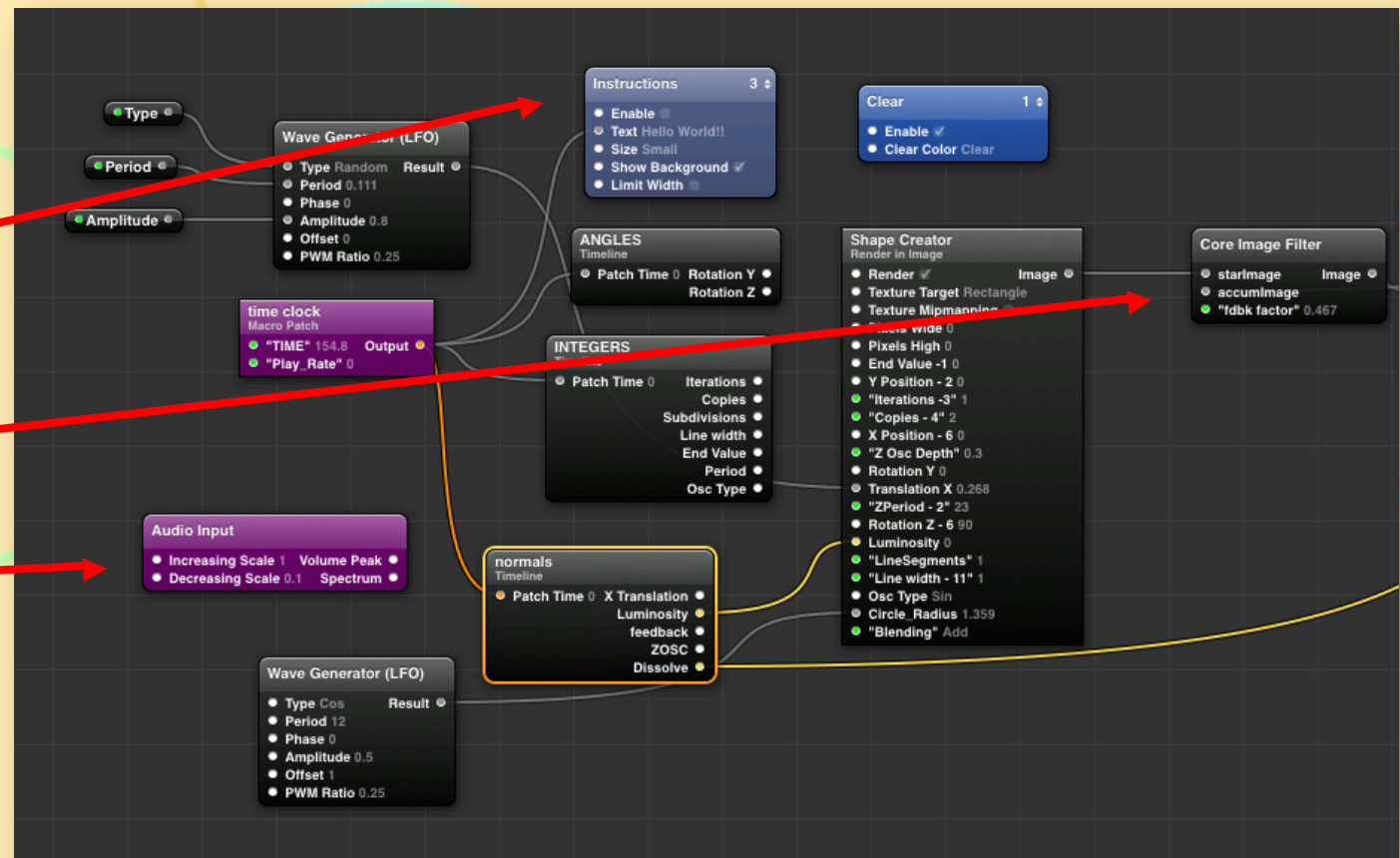
A Typical Max Patch
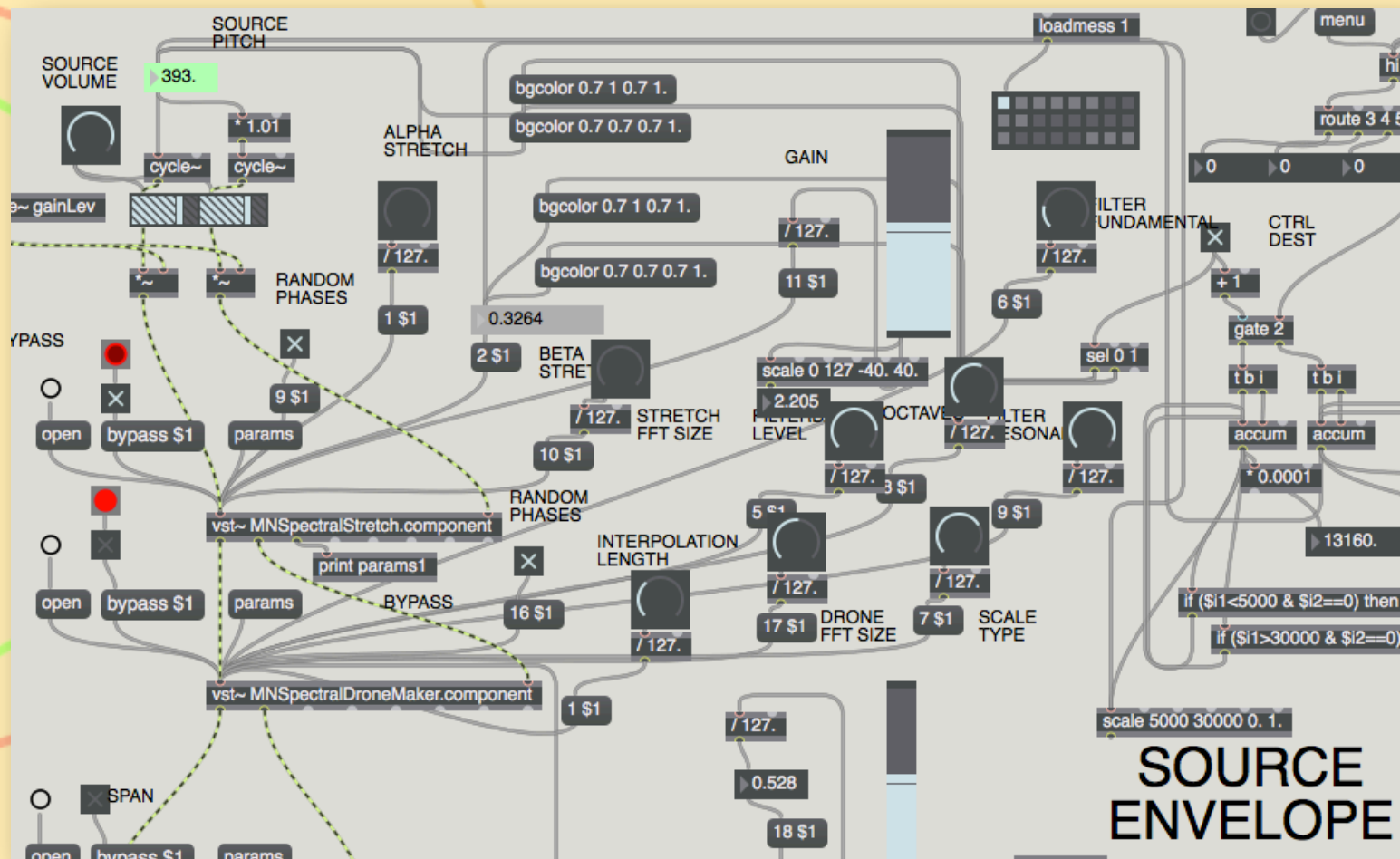
Comparison with MAX

- Similarities
- *Node based object connection*
- *Real time operation*
- *Patch library, editor window, viewer window*
- Compare with max object library, editor window, jitter window

- Differences
- *Quartz mostly for motion graphics / visualisation (limited audio functionality)*
- *Limited GUI interaction objects*
- input parameters from viewer window
- *Written from a visual coder's perspective – not a musician's*
- *Limited visual differentiation between object types*
- *No Jitter type physics*
- *Better graphic quality generally easier to achieve than with Jitter?*

- Combining both Programs
- *Communicate between MAX and Quartz via Syphon, udpsend, OSC and MIDI*

Diffraction

- **Patch 01**
- *Some parts based on Quartz tutorial patch:*
- http://quartzcomposer.com/compositions/52-core-image-star-shine-qtz

- **Diffraction**
- *https://vimeo.com/40227256*
- **Colours and the diffraction of sound**
- *More info in thesis*
- http://eprints.staffs.ac.uk/2047/
- **Combination of recorded footage and synthesised animation**
- *First steps with Quartz*

Circadian Echoes

- Patch 02
  - *responds to trackpad input for rotation and application of feedback*

- An intermediate 'study'
  - *https://vimeo.com/127819711*
  - *Textural, atmospheric, slow evolution*
  - *90% Synthesised in Quartz*
  - *One Small section of real video footage and additional manipulation in After Effects*
  - *Interactive openGL spline curve*

- Originally Inspired by Norman McLaren's Pas De Deux
  - *http://www.nfb.ca/film/pas_de_deux_en*

Developing a Timeline and 'Spirograph' animations

- *Patches 03 and 05*

- Further Exploration with Quartz
- Interest in lissajous and Hypotrochoid traces
- inSpace-02
- *https://vimeo.com/148471933*
- *Influenced by teaching and desire to continue composition*
- Animation with timelines
- *Somewhat clunky execution in Quartz*

Current Work

- **Increased interaction**
- Simple geometric forms using points and lines
  - *Varying shapes and feedback*
- Time, tempo and rhythmic interplay
  - *Influence by EDM and beat based music*

More info

- My creative work and research blog
  - *https://davepayl.wordpress.com/*

- Compositions etc on Vimeo
  - *https://vimeo.com/davepayl*

- Quartz Composer Facebook Community
  - *https://www.facebook.com/groups/quartzcomposercommunity/*

STAFFORDSHIRE
UNIVERSITY