

Image Sonification

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sonify.blogspot.com

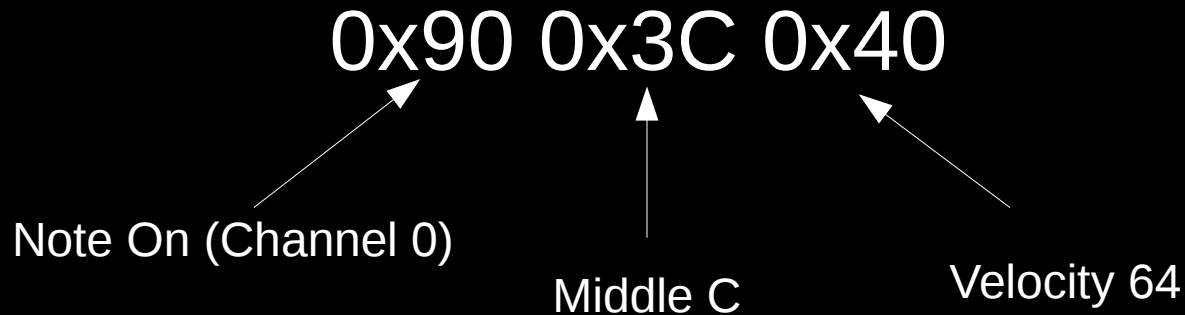
go.warwick.ac.uk/Sonify



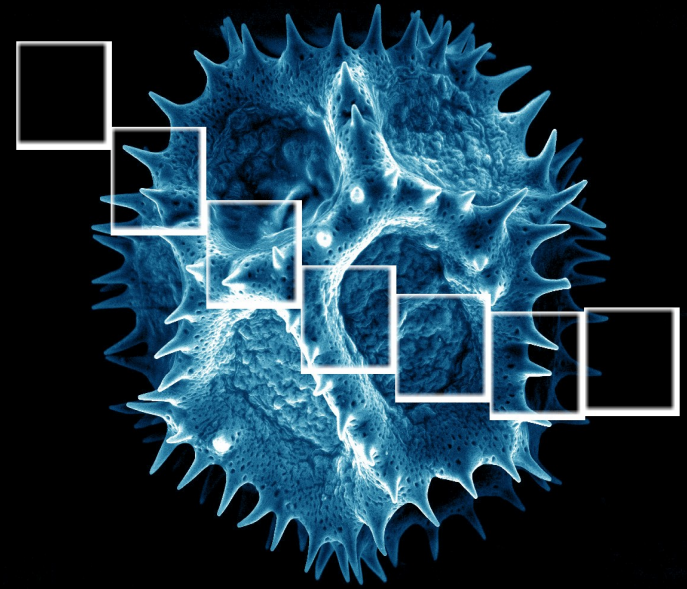
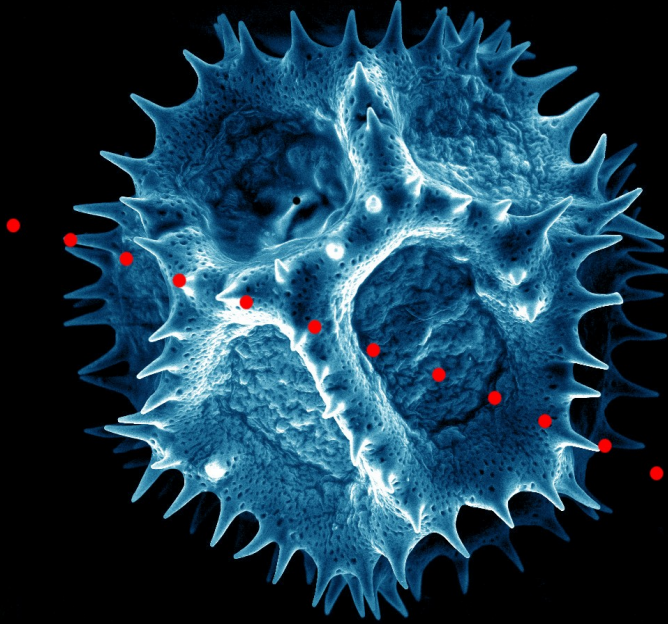
What is MIDI

A byte stream with note on, note off, and control change (eg. hold pedal) messages.

eg.

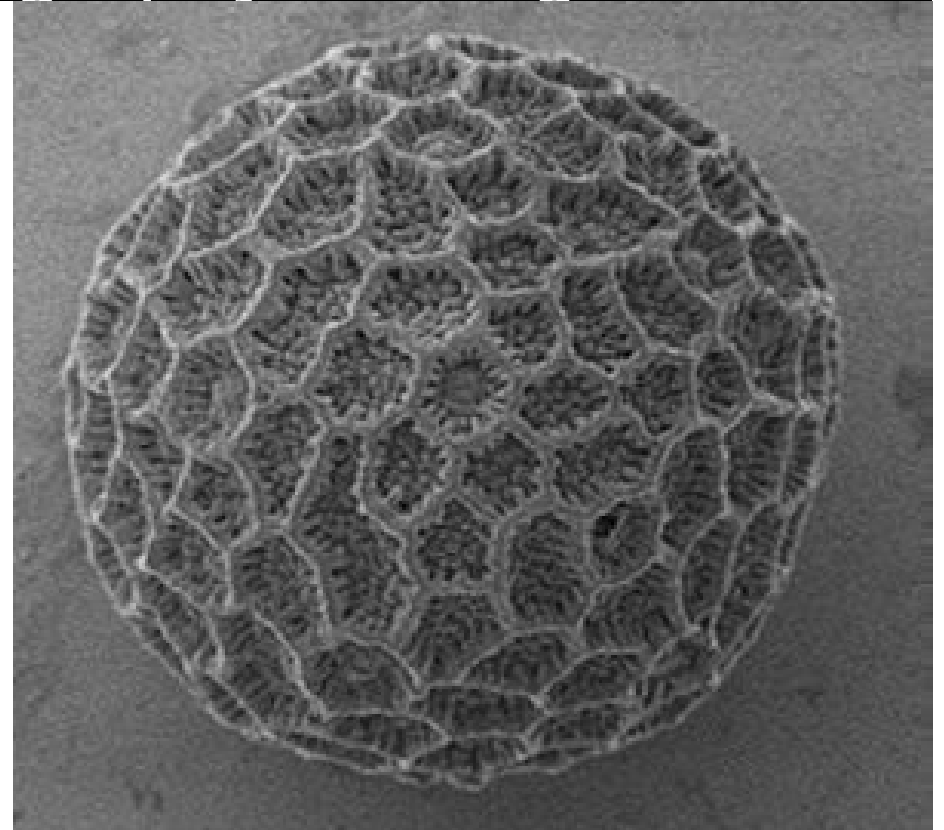
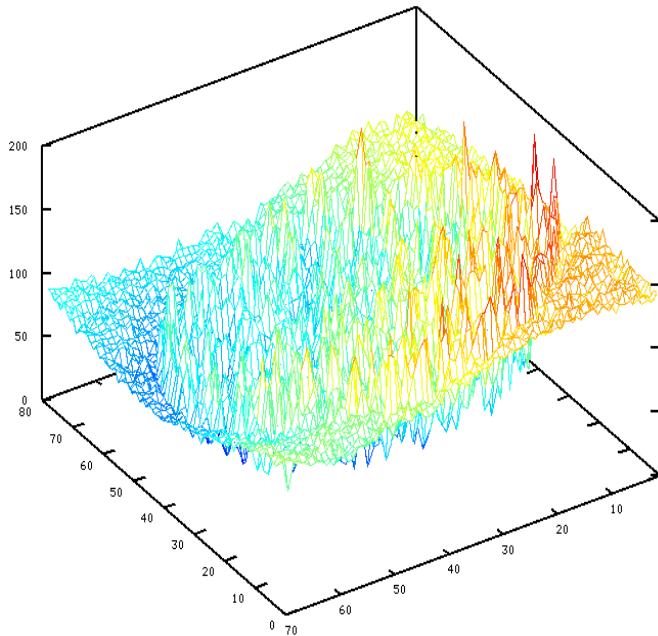


Rastering

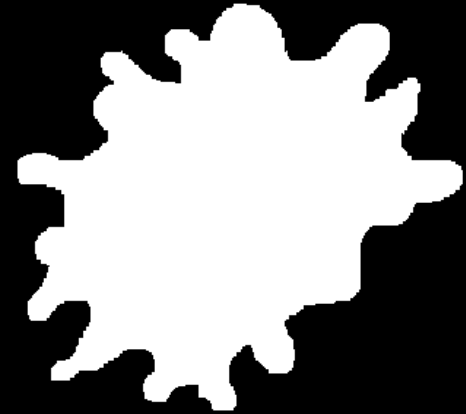
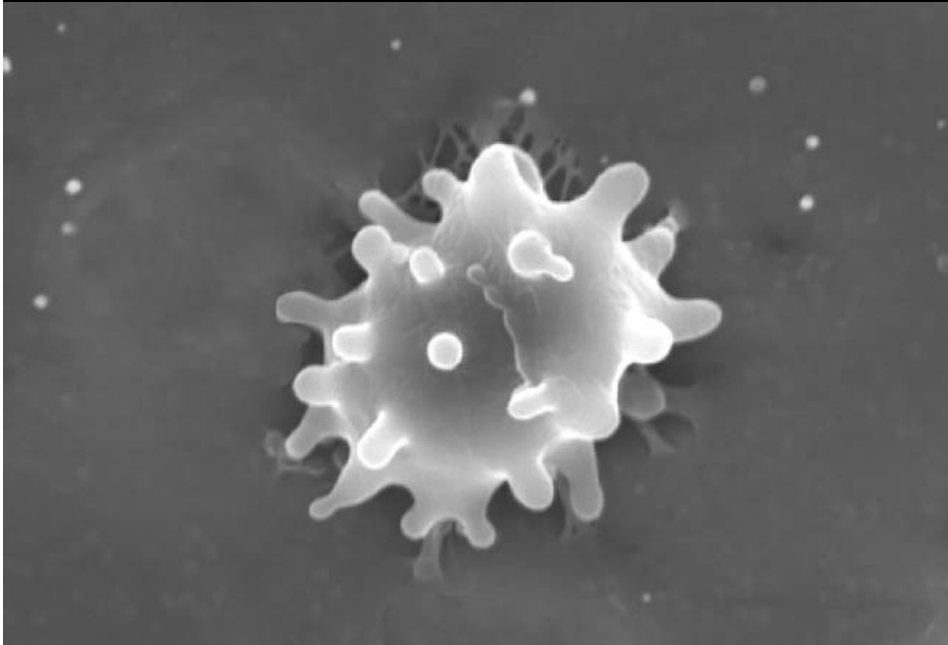


Watershed Algorithm

View greyscale as topography of image:



Watershed Algorithm

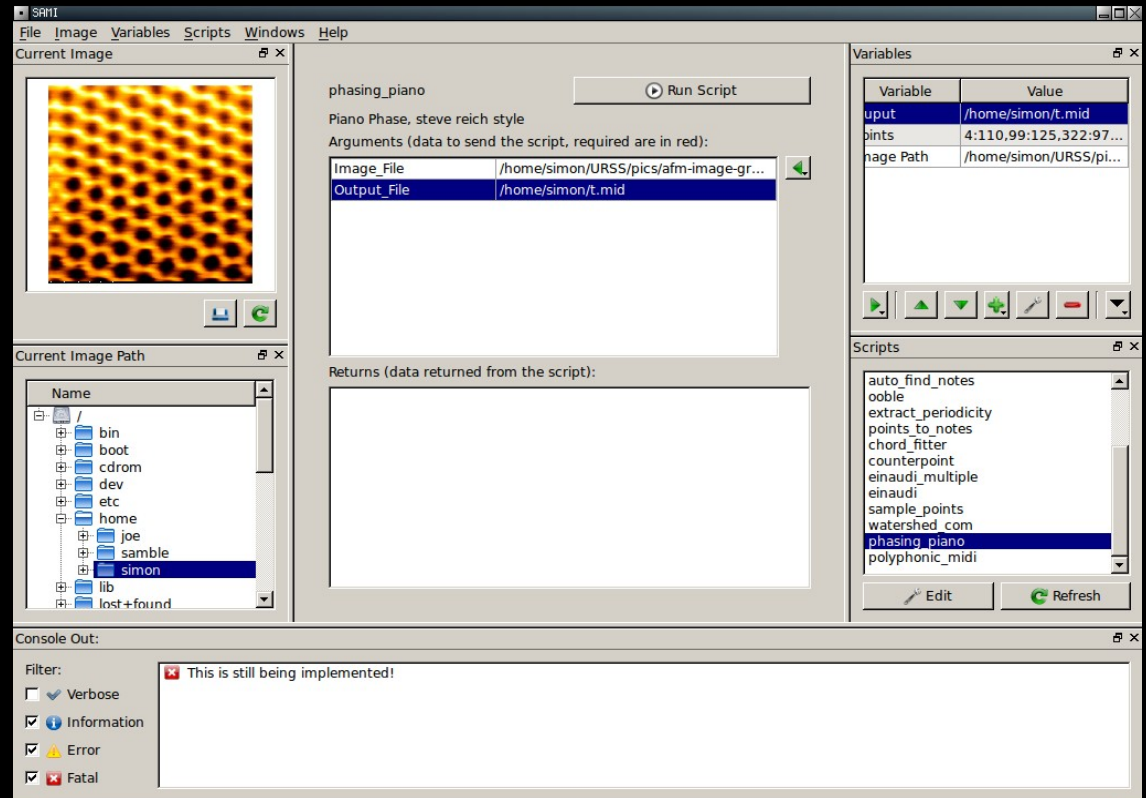


A Framework for Sonification

Quick to build ideas

Easy to save data

Much nicer interface



Inside the Framework

Created with Qt (qt.nokia.com) and an embedded python interpreter.

Parses scripts, provides a store of information.

One click script editing and playing of midi files.

Basic graphical feedback.

Extracting Useful Data from Images

Greyscale Histograms

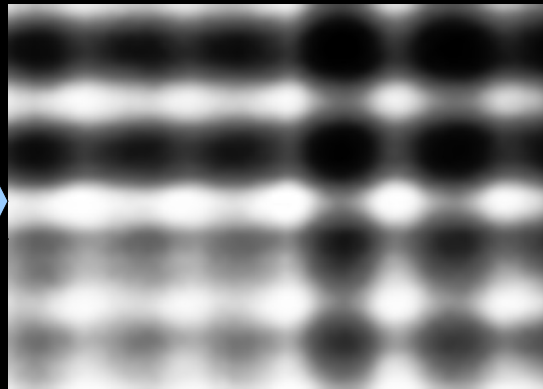
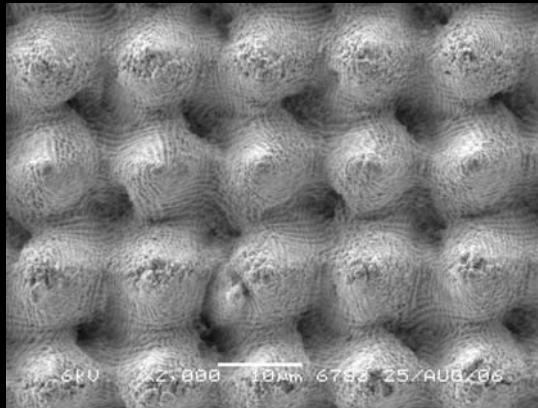
Standard Deviations

Means

etc

Autocorrelation

$$(f * f)(n, m) = \sum_a \sum_b f(n, m) f(n+a, m+b)$$

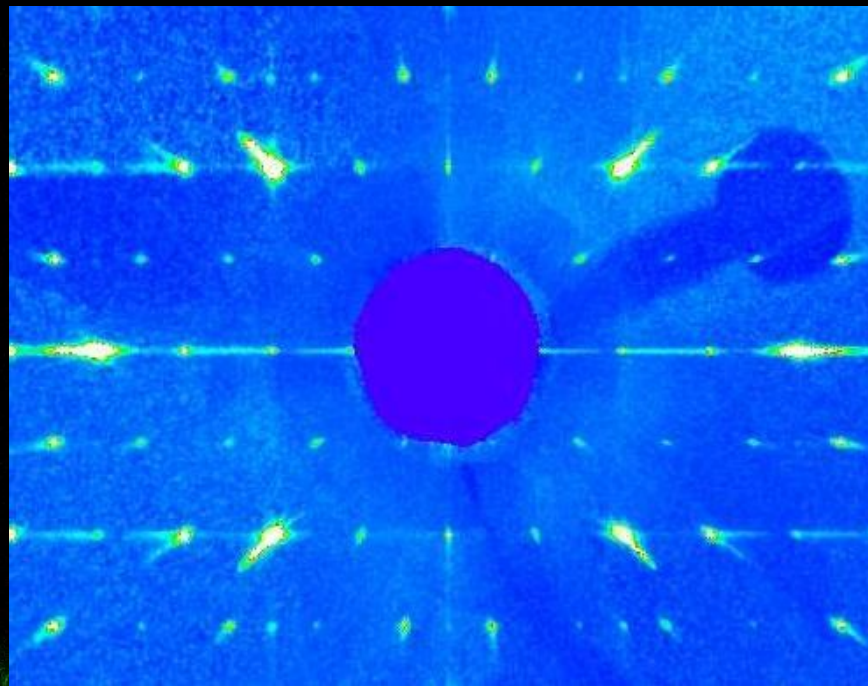
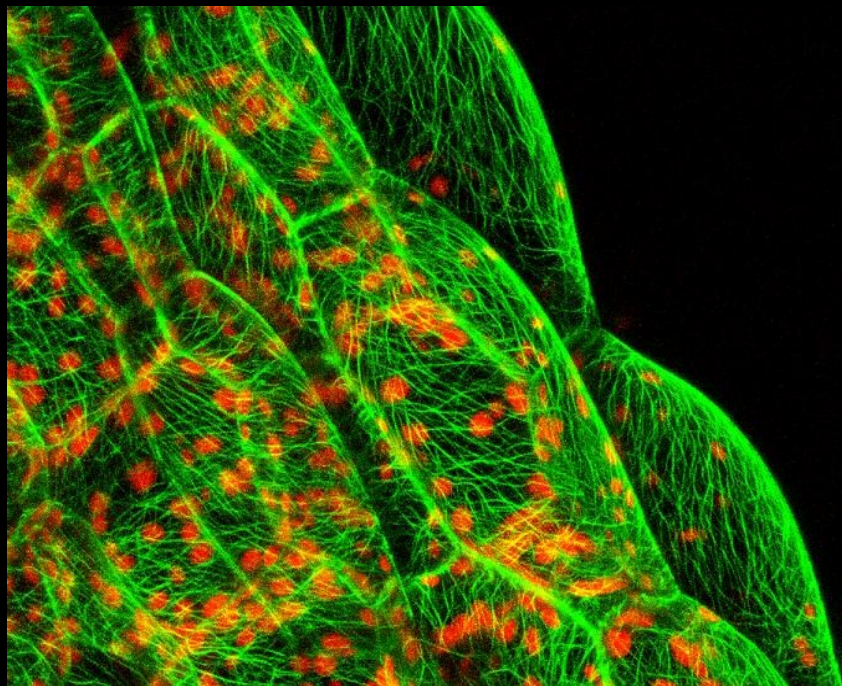


Specific Algorithms

Attempts to create reasonable music by being more restrictive:

- Choose a chord patterns and force melody
- Force the melody to be periodic
- Force the 'expressions' to be in a set style

Music



IGOR Integration

Sonifying images in real time as they are produced by a microscope.

The Future

More (and less) User Interaction

Bigger and more complex pieces

Clever uses of image properties

Any Questions?