

Eigenharp

Experiencing Music Differently

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The Eigenharp and What Programmers Can Learn From It

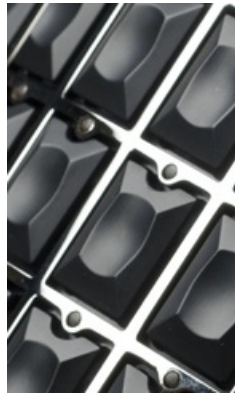
The Eigenharp

A Musical Instrument

Consisting Of:

**Physically Sensitive Hardware
+
Virtual Synthesis Software**

Physically Sensitive Hardware



Keys are sensitive ~1 micron
3D measurements (pressure + x/y position)
Fully-polyphonic : each key can control parameters of note produced



Also has touch-sensitive strips and breath controller



Hardware fully software configurable : make the keys mean what you want

High-speed, error correcting communications : built for stage performance and no-lag between touching and hearing

Utilise industry standard synthesis software for both modelled and sampled instruments



Virtual Synthesis Software

**The most expressive
electronic instrument
ever made**

And it's designed in the UK

There's a range of devices



You're listening
to the mid-range
TAU

But What Can Programmers Learn From It ?

*Apologies for the quality of
the playing...
...it'll be over soon*

Personal Reflections

20+ years in hardware/software

Not a trained musician

..but play(ed) many instruments

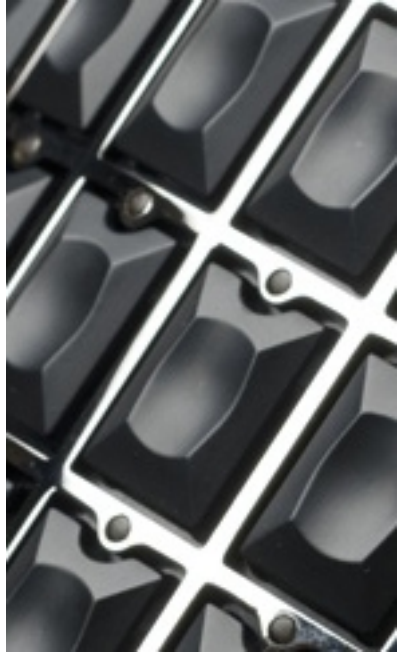
Not associated with EigenLabs

...just love their products

And think they provides some good
illustrations of key points for programmers

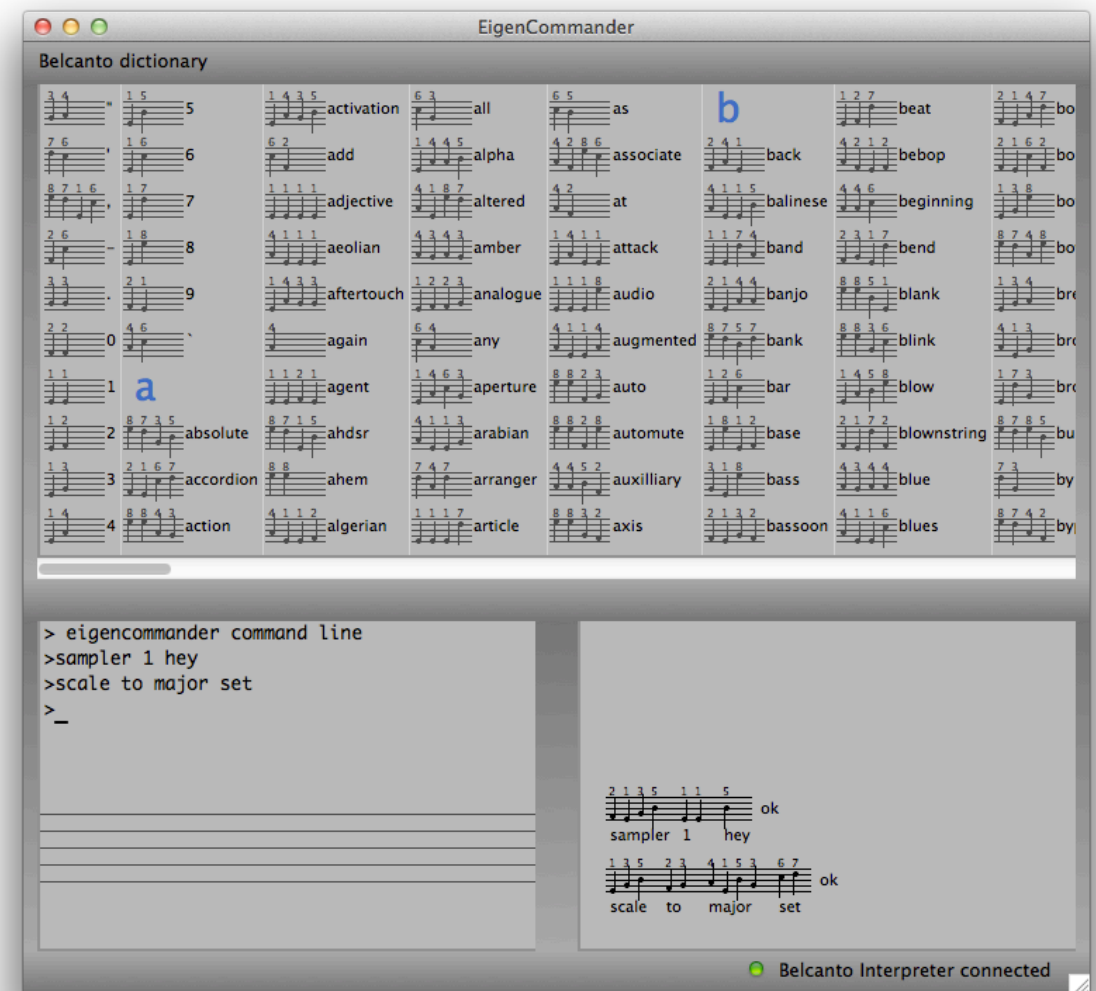
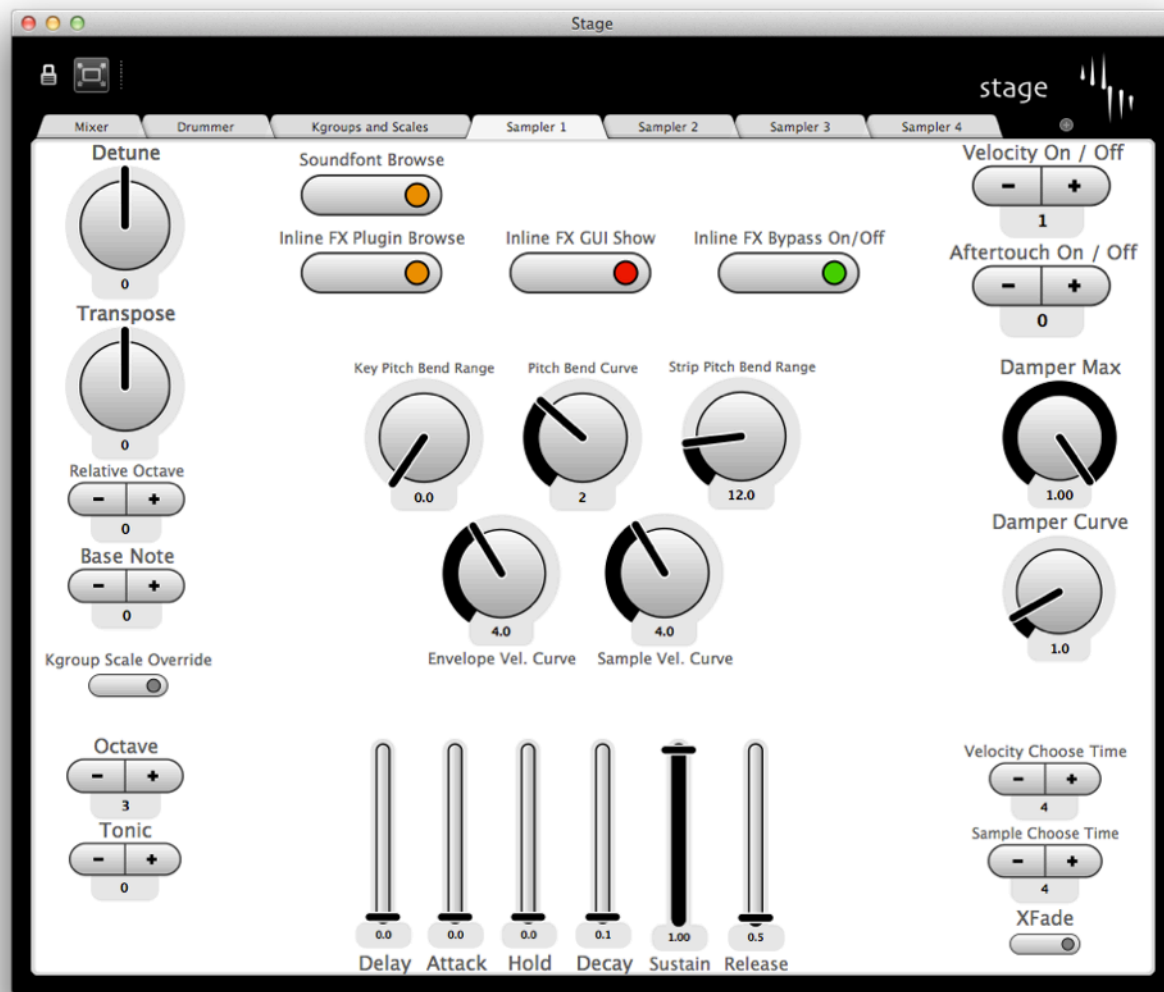
Lesson #6

**Stick to the problem you're
solving by leveraging
others' work**



Lesson #5

**Allow interaction
by multiple mechanisms
(and be open)**



‘Fast’ keys

‘Playable’
Sequences

XML-RPC

OSC

Lesson #4

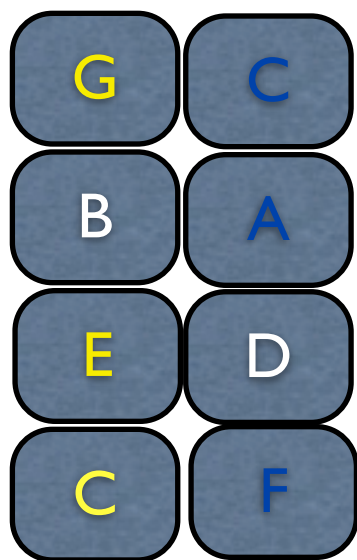
**Don't build for others,
build for yourself
and share it**

Lesson #3

**Respect convention,
but design so they
can be discarded**



Just The Notes
You Want



In The Pattern
You Want



Fixed
Layout

All The
Notes

Lesson #2

**Make the primary UX
exceptional
(and don't worry
about the rest)**

Lesson #1

**Enable users,
don't constrain them**

- **Build a medium by asking “what if...”**
- **Create working examples**
- **Allow users to change everything**

But what about the UX?

Joyful

Exploratory

Emergent Model



Application



Spreadsheet

Stigmergist



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