



STRANGE

the first INTERACTIVE PLAYER PIANO 

AL MENDILI @almendili

CARA McKINLEY @thereisnonesuch

BEN CHAYKIN @tonysnark

dk[®]

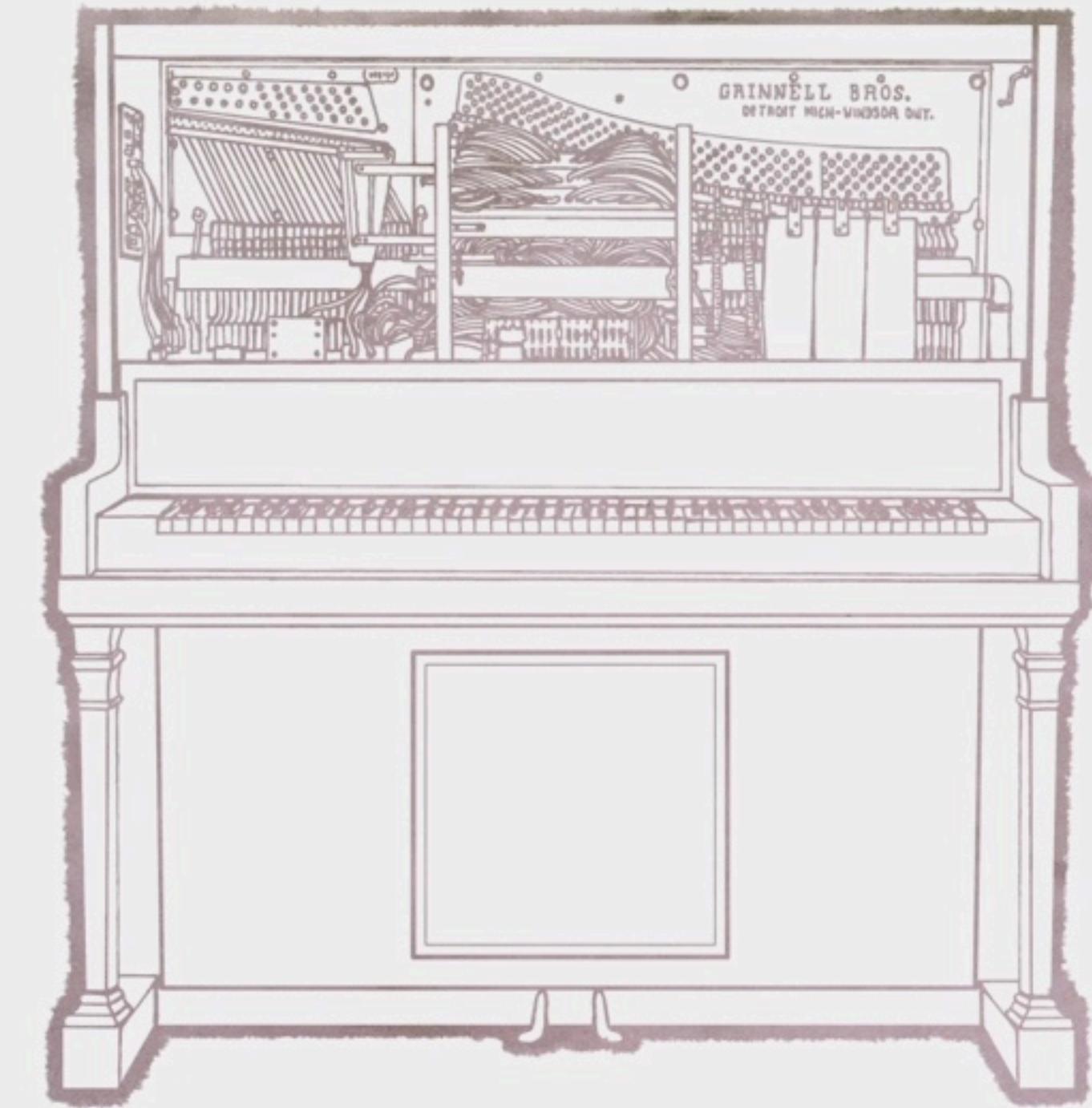
@STANLEYPIANO

- ▶ Idea & implementation
- ▶ Components
- ▶ S.T.A.N.F.O.R.D
- ▶ Stanley
- ▶ Questions

IDEA & IMPLEMENTATION

- ▶ We were approached by the Capitol Hill Block Party to make an installation. After a few brainstorming sessions, we all rallied around one idea.
- ▶ From that point we had about 3 weeks to produce everything, while still working on our regular projects.
- ▶ A core team of 4 people, with pretty much everyone in the office helping out at specific moments during the project.

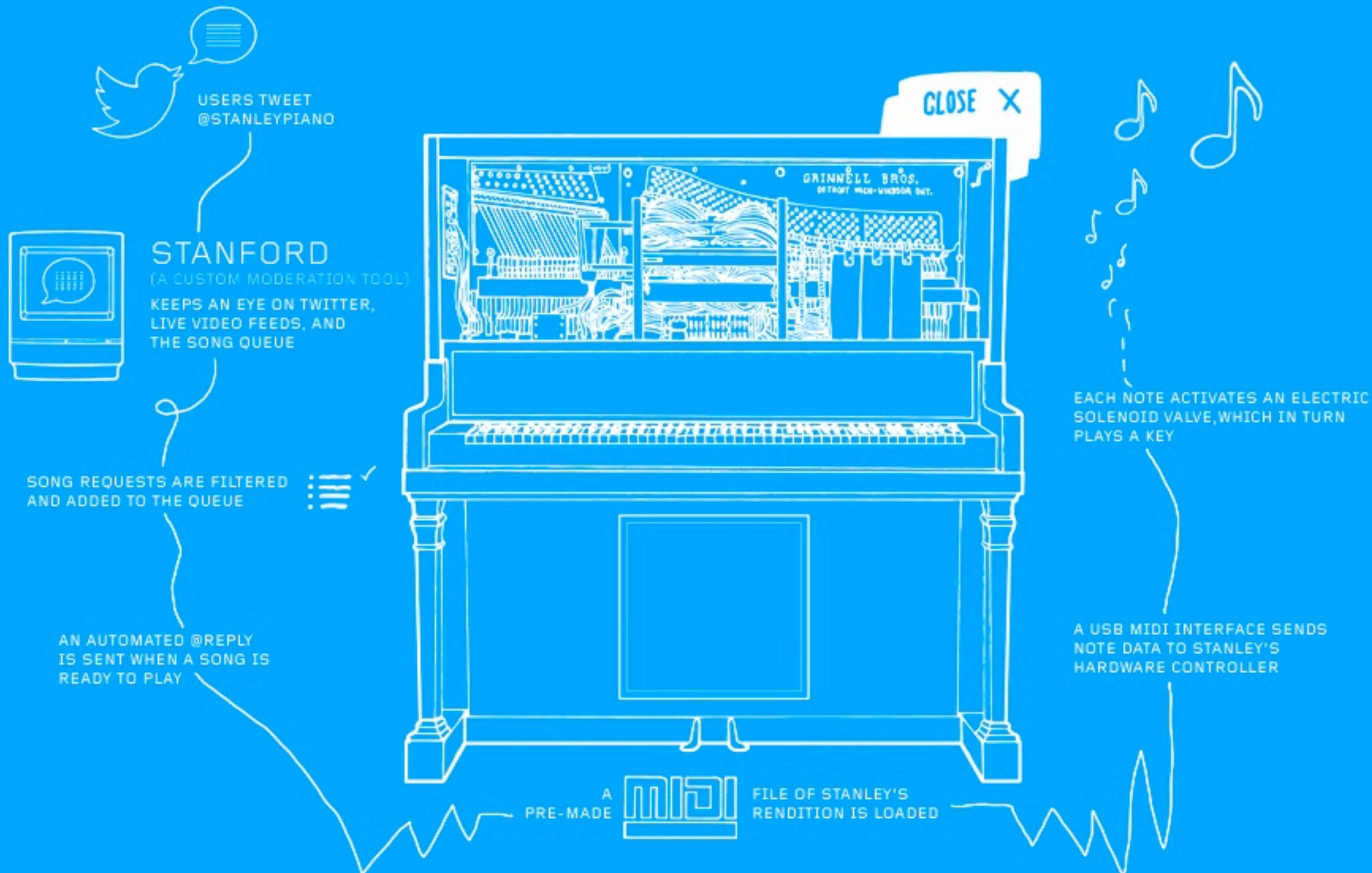
THIS IS STANLEY



[HTTP://VIMEO.COM/45830194](http://VIMEO.COM/45830194)

A PROJECT by DIGITAL KITCHEN

STANLEY



COMPONENTS



STAGE



LIGHTING



GIG POSTER

A PROJECT BY DIGITAL KITCHEN

LEMOLO IN THE HOUSE!

I'M PLAYING LEMOLO / OPEN AIR FOR THE CROWD



MAKE A
REQUEST

@STANLEYPIAN



STANLEY'S VOICE

An AIR app on a screen gave a voice and personality to Stanley.



LIVE FEED

We used FlashMediaLiveEncoder and Influxis. Flash stream for most devices and HTML5 stream for iOS.

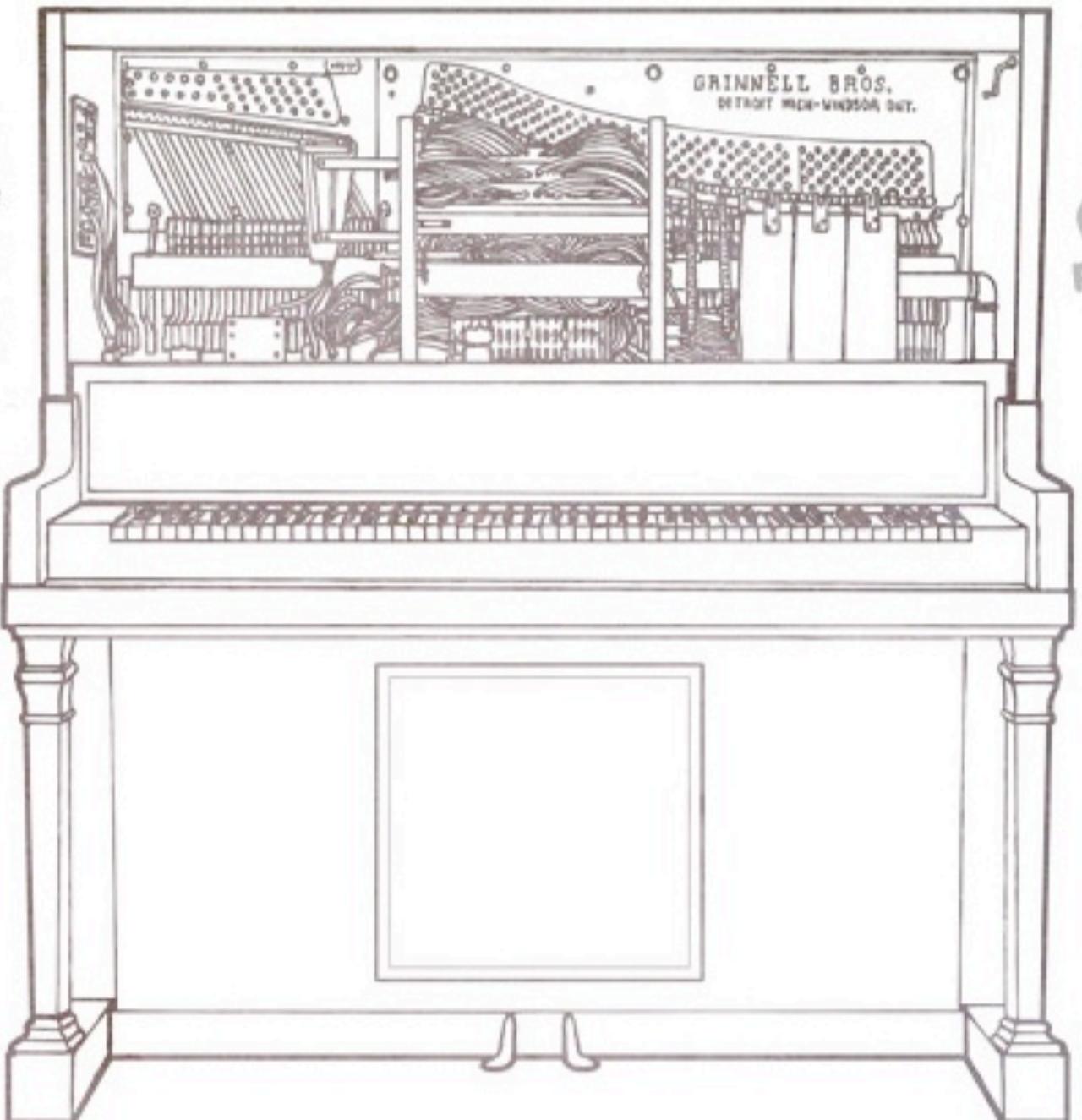
A PROJECT by DIGITAL KITCHEN

STANLEY

STANLEY
an INTERACTIVE
PLAYER PIANO

meet
STANLEY
▶

HE'LL play YOUR
FAVORITE JAMS,
INCLUDING SONGS
FROM EVERYONE
PERFORMING at BLOCK PARTY



dk

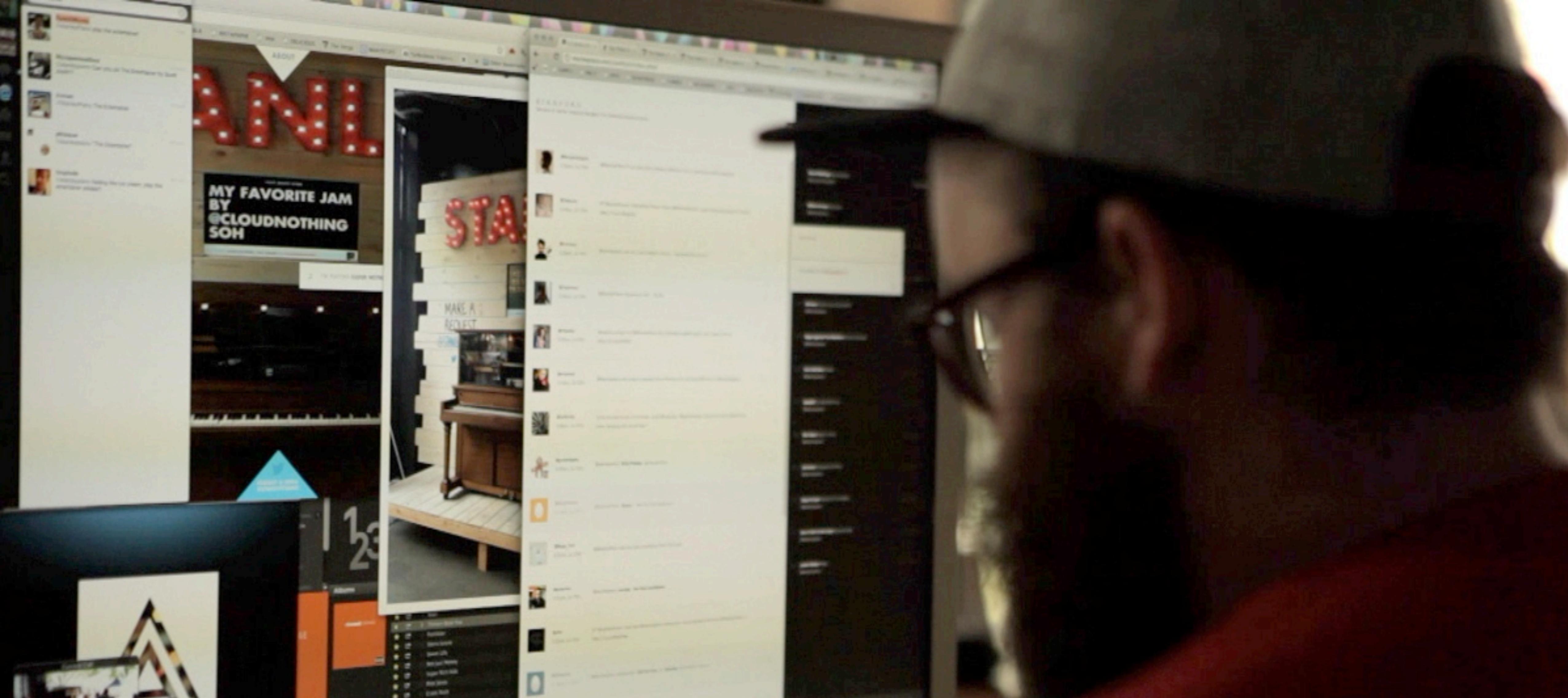
© 2012 Digital Kitchen LLC.

STREAMING Live
jULY 20 ➔ 22
FROM THE CAPITOL HILL BLOCK PARTY

SEE HOW IT WORKS

MAKE A REQUEST
OR JUST STRIKE
UP A CONVERSATION
@STANLEYPIANO

WEBSITE



S.T.A.N.F.O.R.D (CMS)



PLAYER PIANO



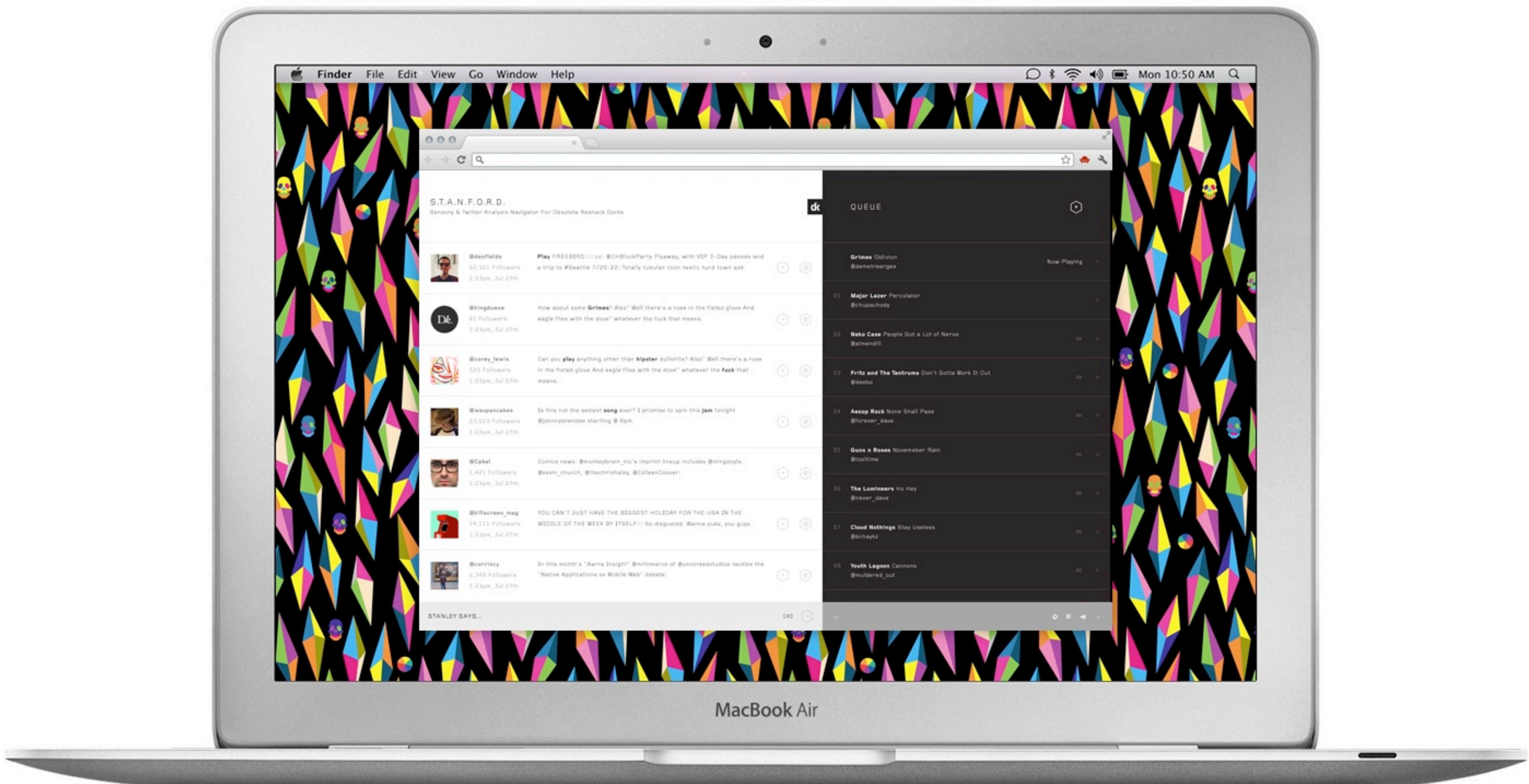
CAPITOL HILL BLOCK PARTY

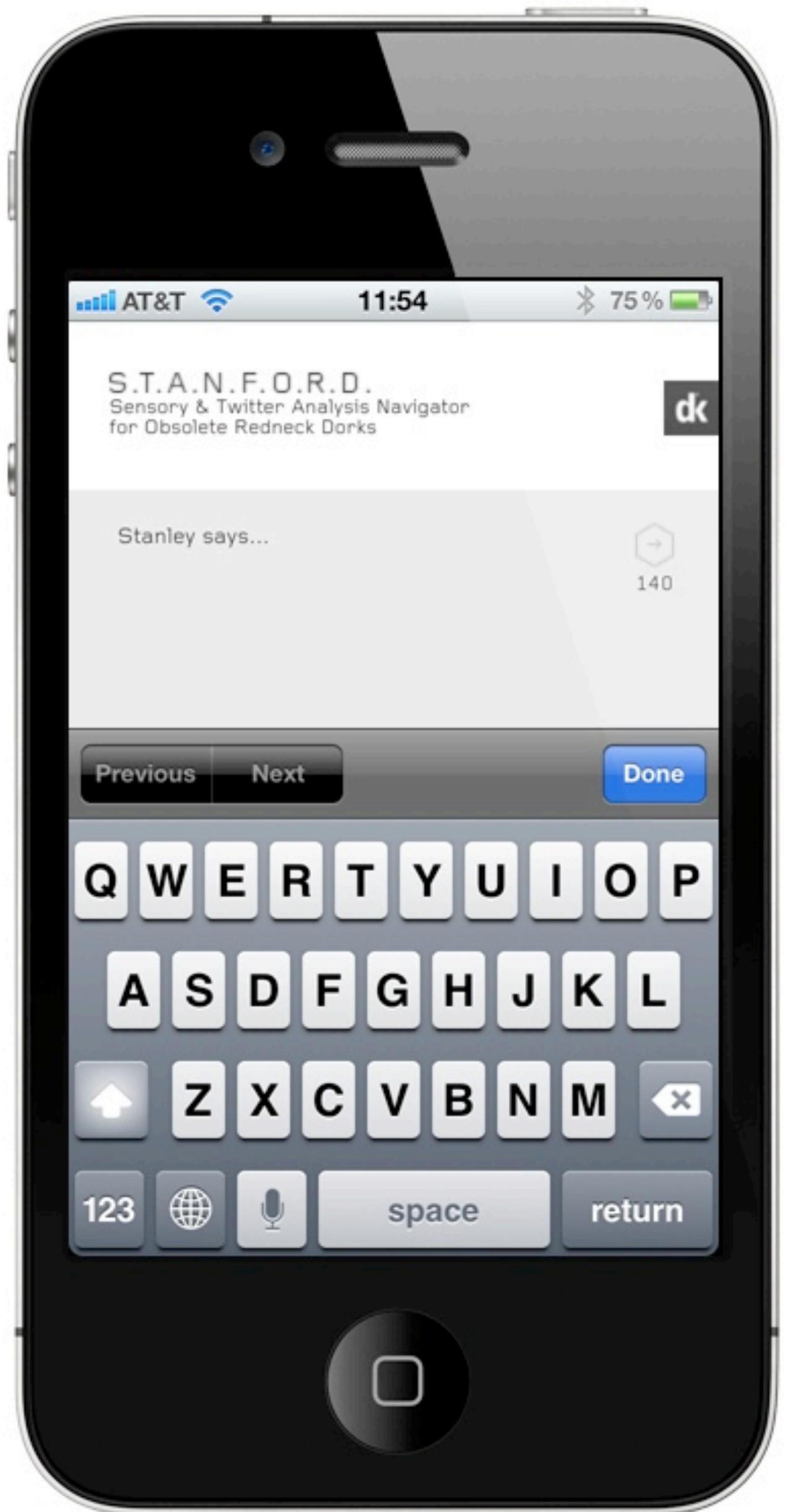
S.T.A.N.F.O.R.D.

Sensory & Twitter Analysis for Obsolete Redneck Dorks

S.T.A.N.F.O.R.D.

- ▶ Admin can monitor Twitter feed, add requests for a user, send out tweets, and manage the song queue
- ▶ Songs are prepopulated in the database
- ▶ A generated regex searches for known artists and songs in each tweet and highlights them
- ▶ The song list has a dynamic search bar
- ▶ Tweets are sent out automatically when a song is up next, and when it starts playing





S.T.A.N.F.O.R.D.

- ▶ Twitter oAuth, Search API and Status API
- ▶ PHP/mySQL
- ▶ Javascript/HTML5/CSS3
- ▶ Web Sockets

CLIENT **SERVER** **PIANO**

- ▶ Queue actions (add/remove/reorder) sent from client to server via websockets; updates queue state in database
- ▶ Adobe Air app polls server for changes in queue state, and sends commands to the piano
- ▶ Piano can send a 'song complete' command to the Air app, which calls php endpoint that updates the queue state and sends a message via websockets to all clients

USING WEBSOCKETS

- ▶ <https://github.com/lemmingzshadow/php-websocket>
- ▶ Server reqs: shell access to server, an open port, PHP 5.3
- ▶ Client reqs: browser has to support server protocol (our php lib requires the latest of Chrome or FF)

USING WEBSOCKETS

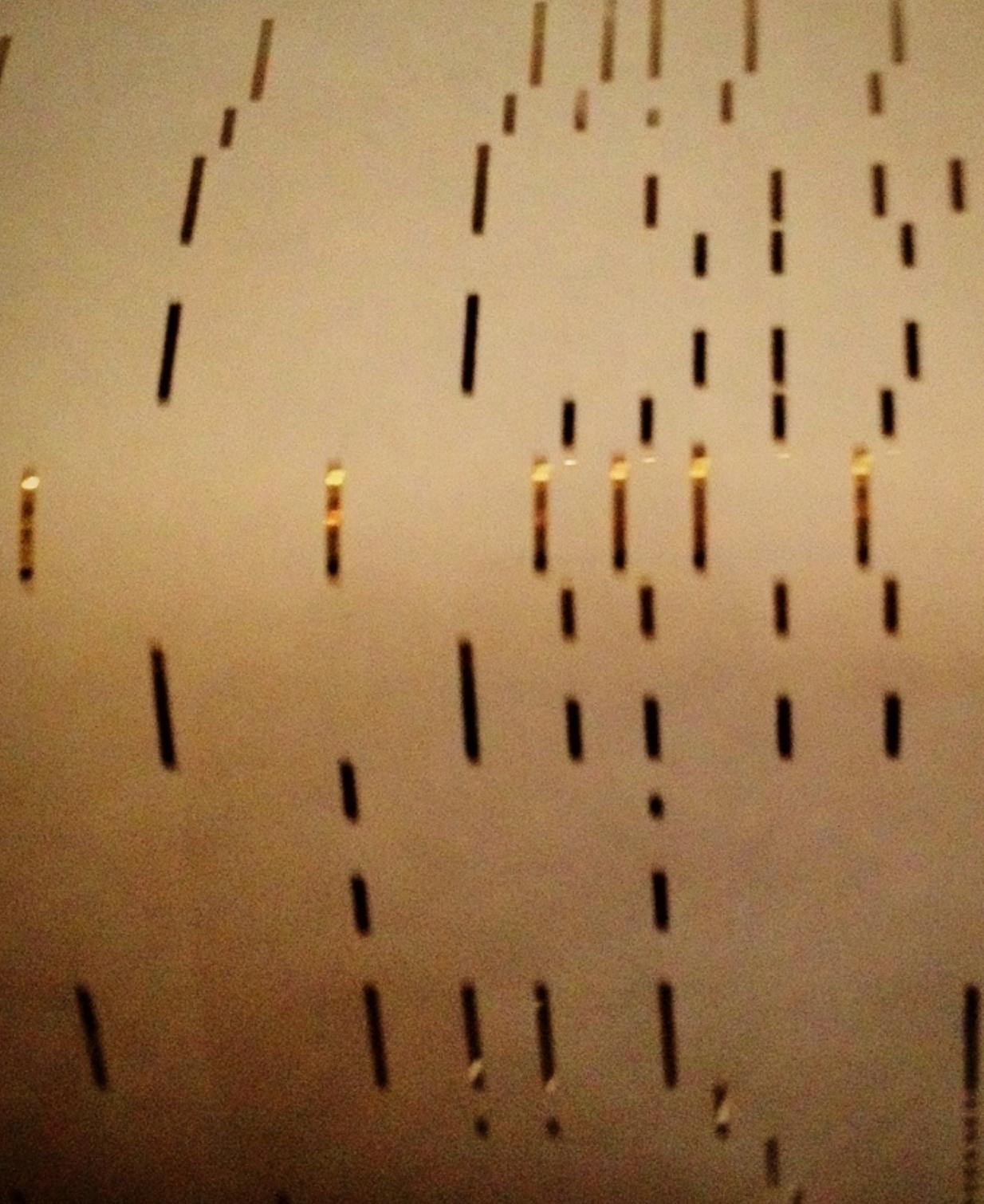
- ▶ Read up on multi-user networking: <http://gafferongames.com/networking-for-game-programmers/what-every-programmer-needs-to-know-about-game-networking/>
- ▶ Security risks. Another good resource: <http://blog.kotowicz.net/2011/03/html5-websockets-security-new-tool-for.html>

STANLEY



STANLEY HIMSELF

- ▶ Player piano bought off craigslist.
- ▶ Huge learning process. Stanley was broken and fixed more than once.
- ▶ Main modification was replacing the analog piano roll reader with a digitally-controllable solution.

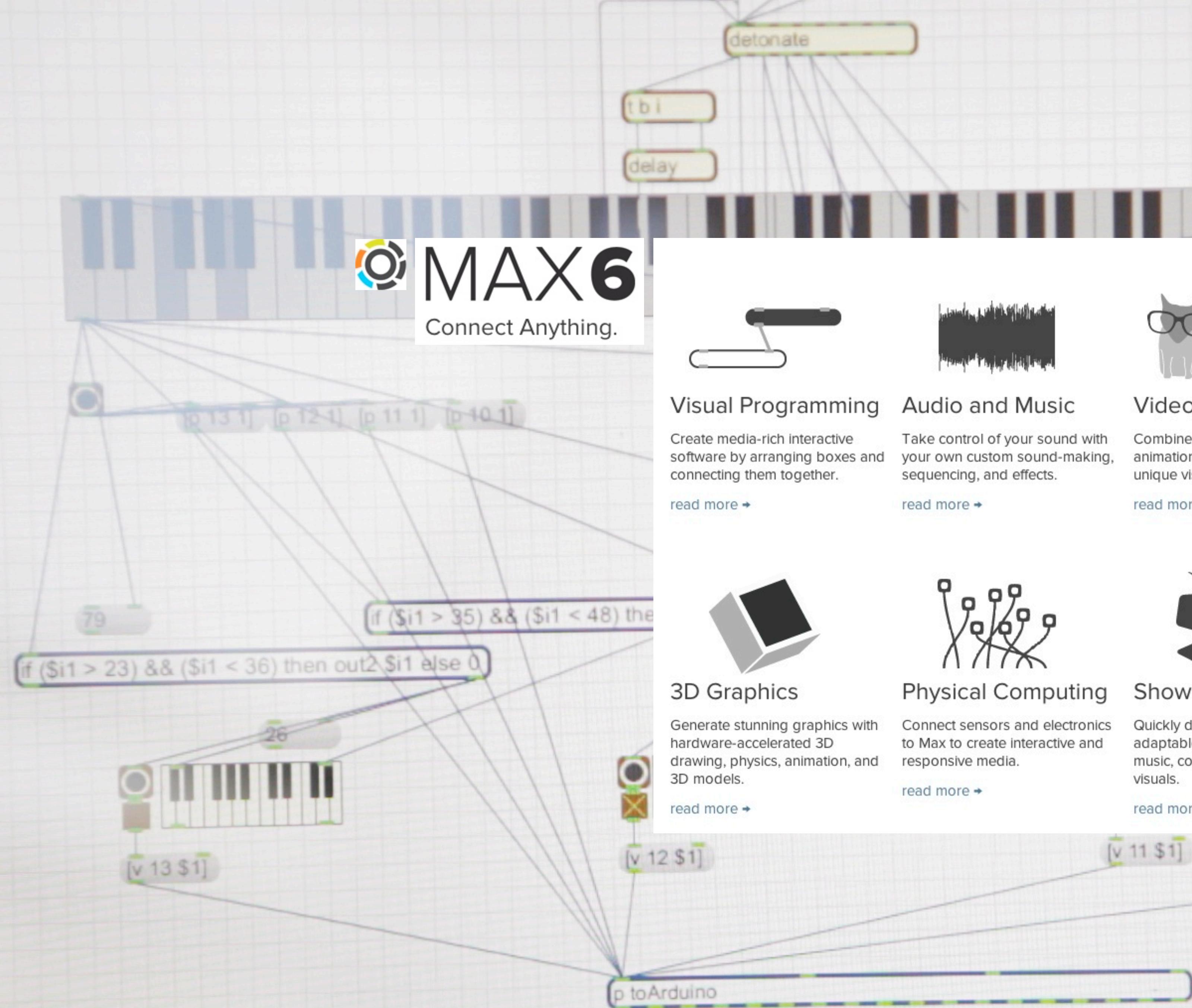






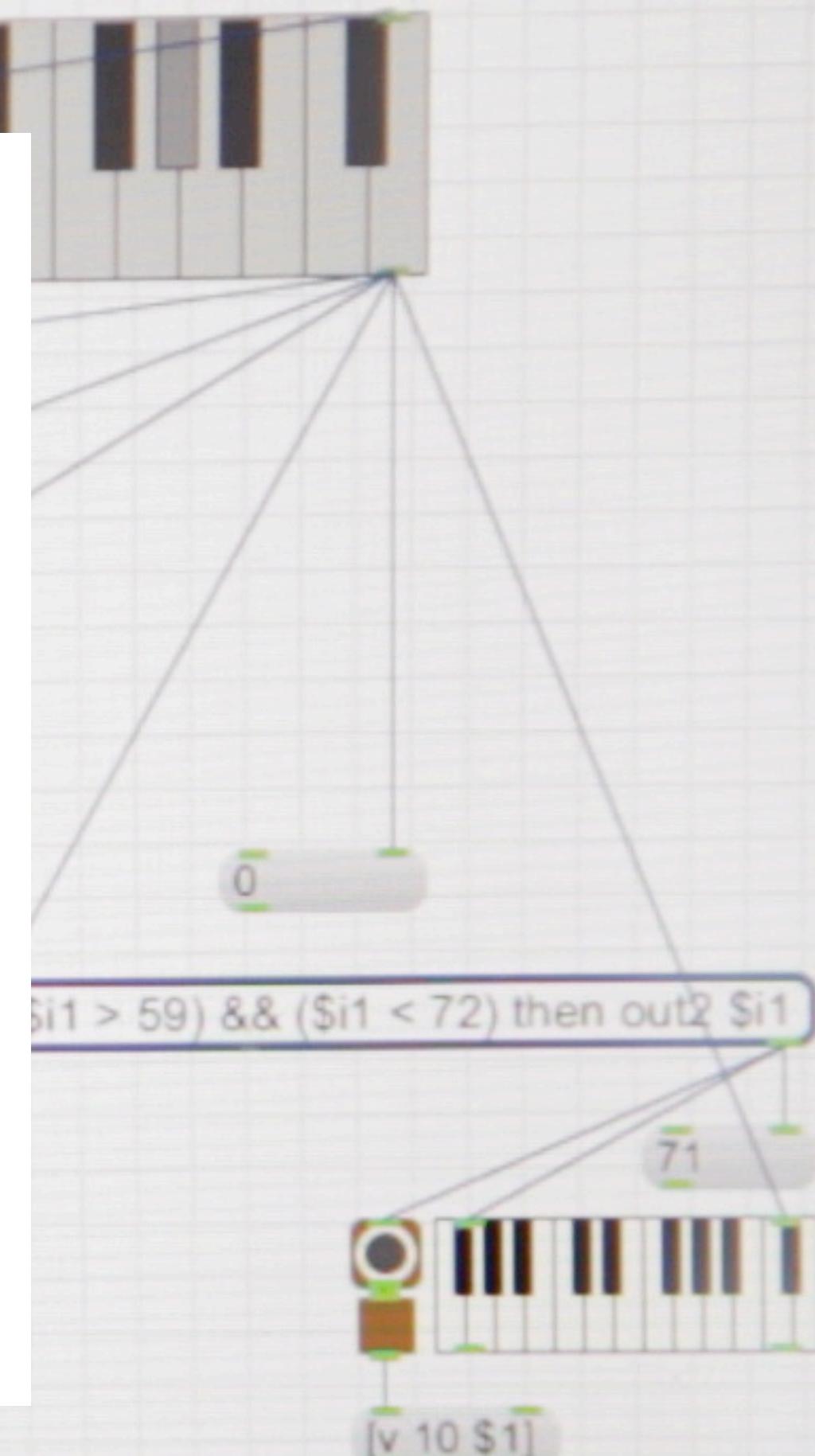
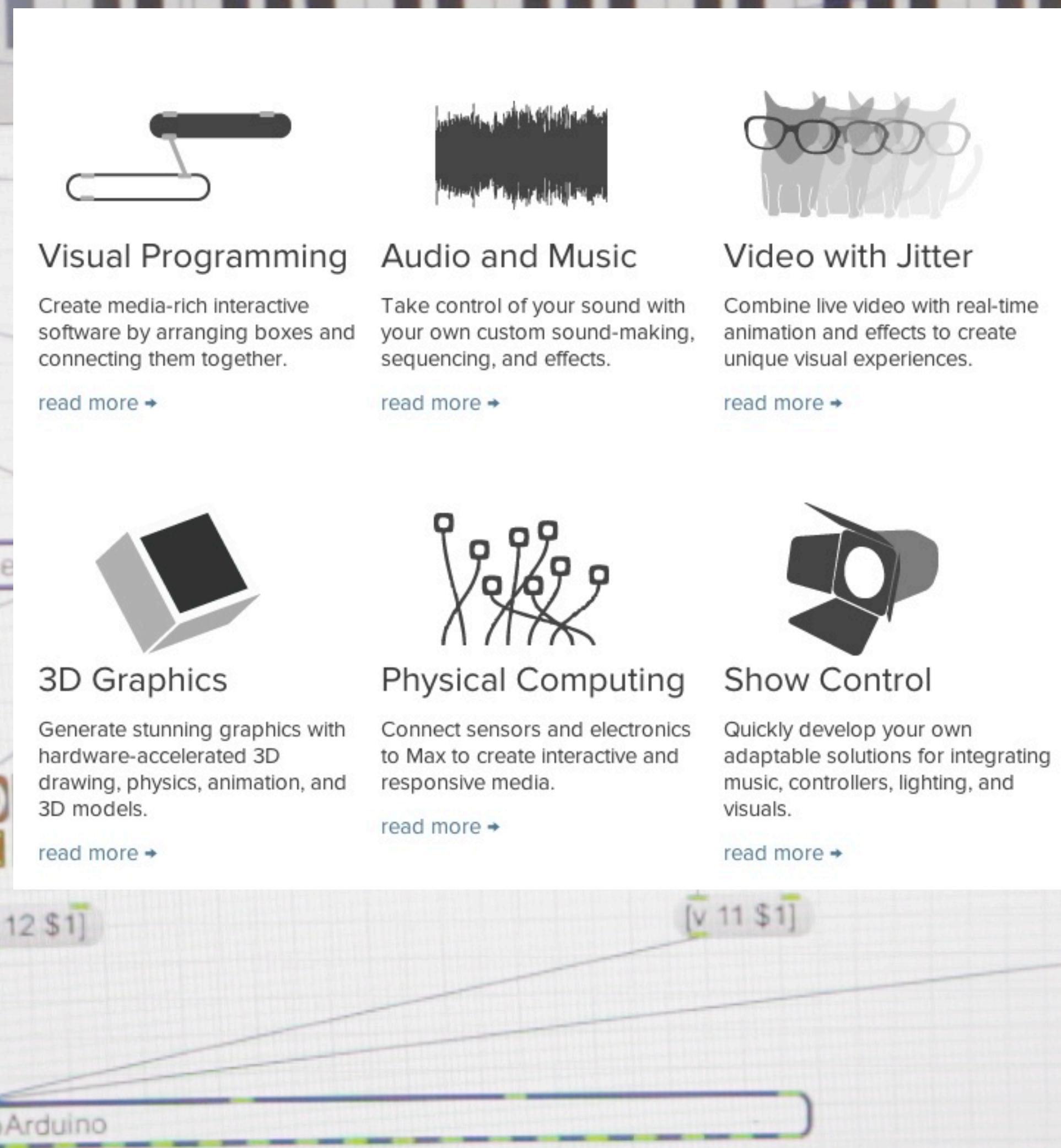


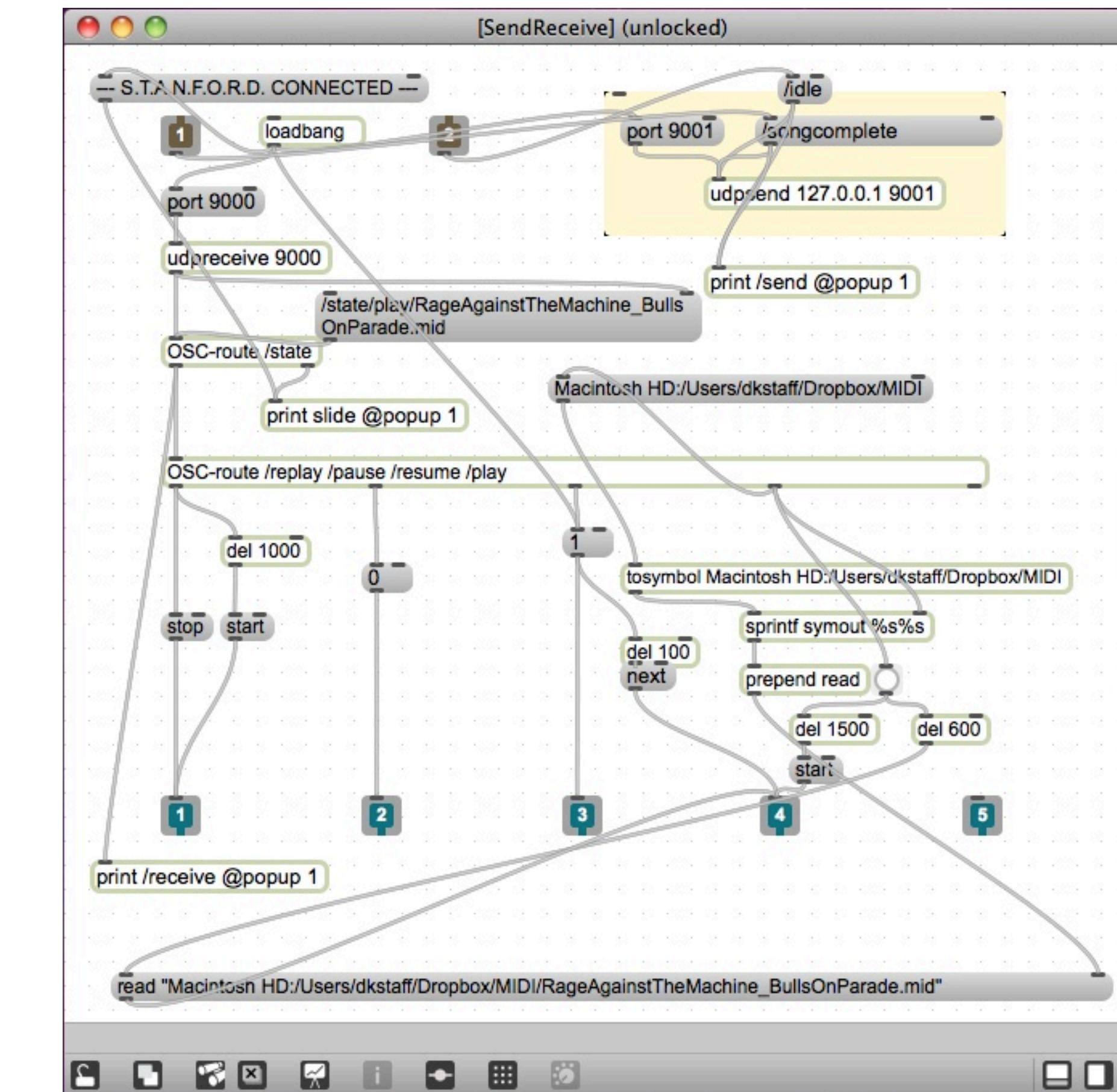
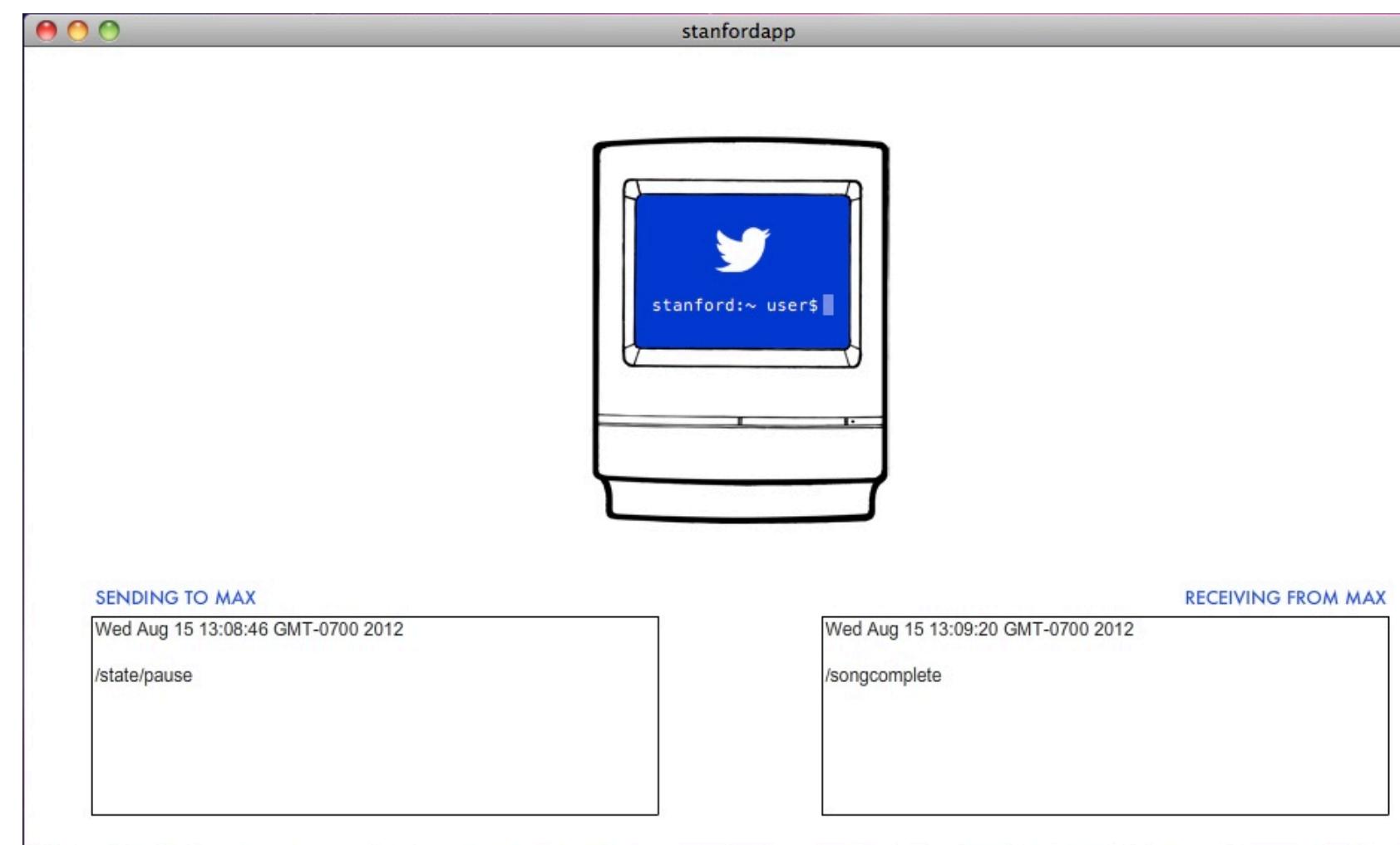
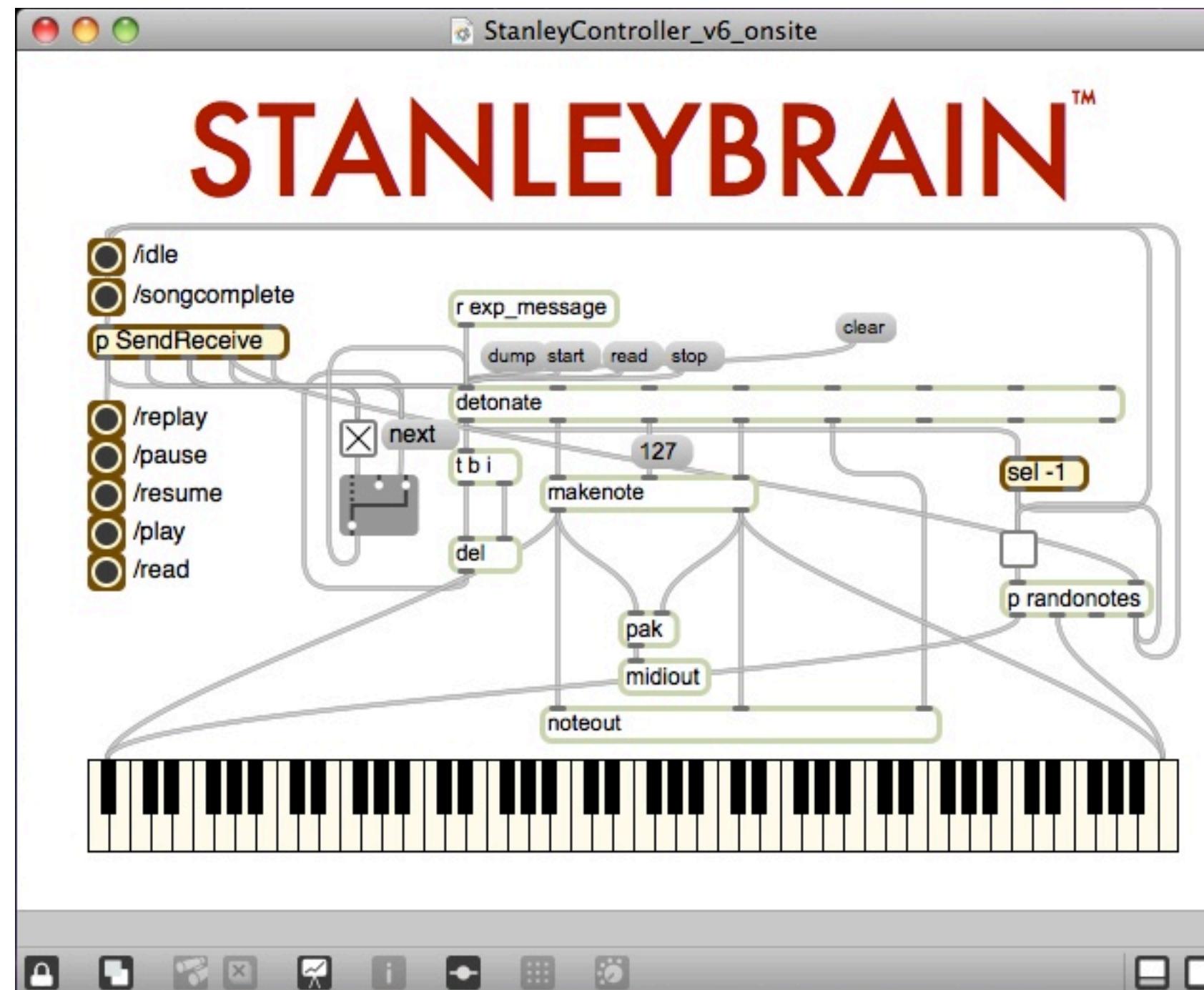




MAX6

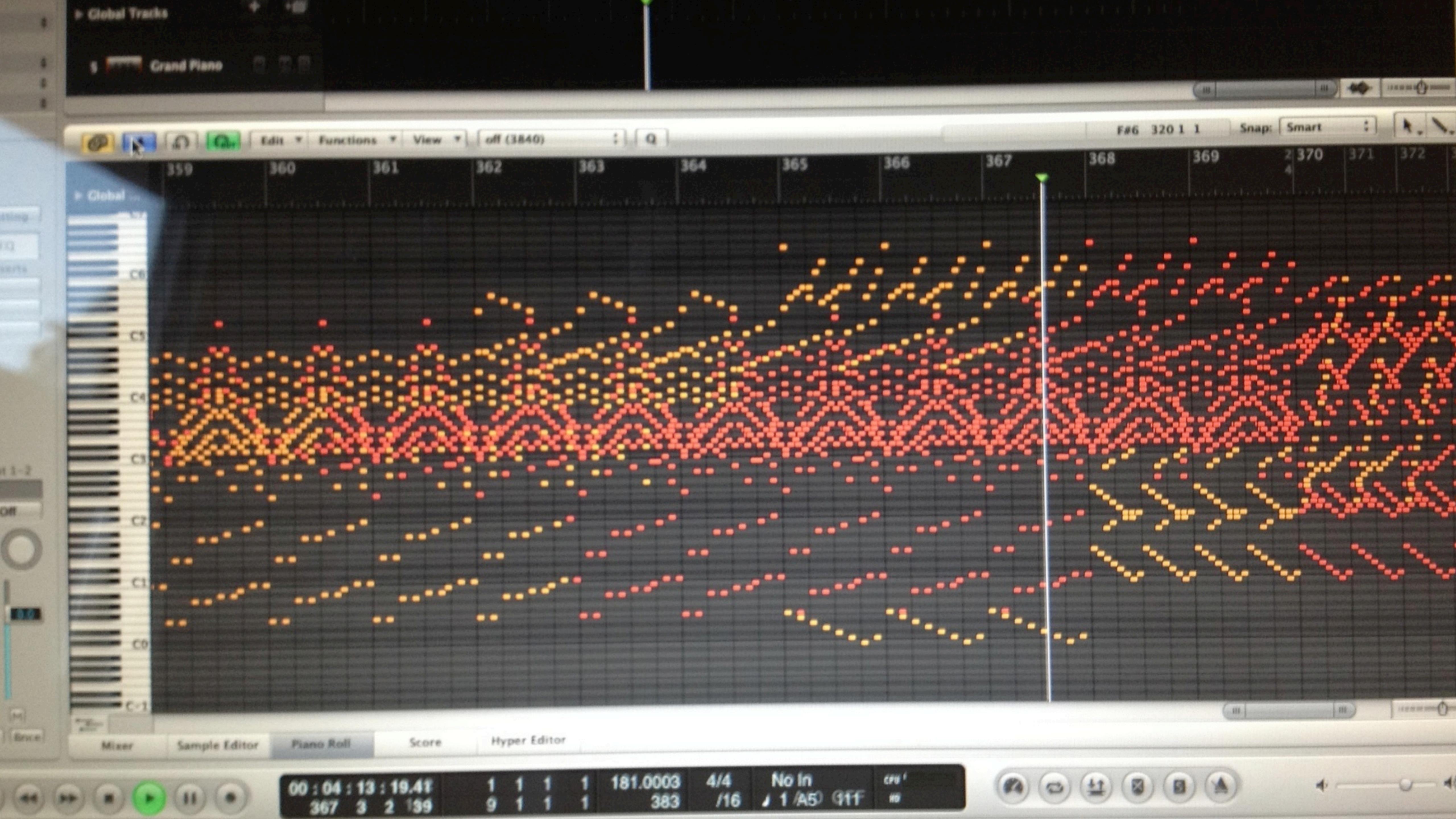
Connect Anything.





INTERFACING WITH STANLEY

- ▶ MAX6 for ease of interface and tons of midi control.
- ▶ All MIDI files were either hand-composed or hand-converted to fit Stanley's specific MIDI needs.



This composite image illustrates a music production setup. On the left, a person's hands are shown playing a dark wooden keyboard. In the center, a laptop screen displays a digital piano interface with a keyboard graphic and various controls. On the right, two software windows are open: a top window showing a track list and settings for a 'Stanley' device, and a bottom window showing a piano roll editor with musical notes and a key map.

Top Right Window (Inspector):

- 3 selected:** Quantize: off (3840), Q-Swing: Loop:
- Global Tracks:** 1 Stanley (R M S), 2 Stanley (R M S), 3 Stanley (R M S), 4 EXS Grand Piano (R M S)
- Stanley Settings:**
 - Icon:
 - Port: All, Channel: 1, Program: 0, Volume: 100, Pan: 64
 - Transposition: +12, Velocity: Key Limit: C-2 G8, Vel Limit: 0 127
 - Delay: No Transpose: No Reset: Style: Auto

Bottom Right Window (Piano Roll Editor):

- Functions:** Edit, Functions, View, 1/16-Note
- Global ...:** C5, C4, C3, C2, C1, C0
- Piano Roll:** Shows a grid of notes for each key (C5 to C0) over 19 measures. The notes are primarily red, with some yellow and green highlights.
- Mixer:** Shows faders for Rev, Chor, Off, and a volume fader set to 100. A Master fader is also present.



MORE INFO

WWW.STANLEYPIANO.COM

@STANLEYPIANO

THANK YOU

AL MENDILI @almendili

CARA McKINLEY @thereisnonesuch

BEN CHAYKIN @tonysnark

