

Music & Machines: a Mashup

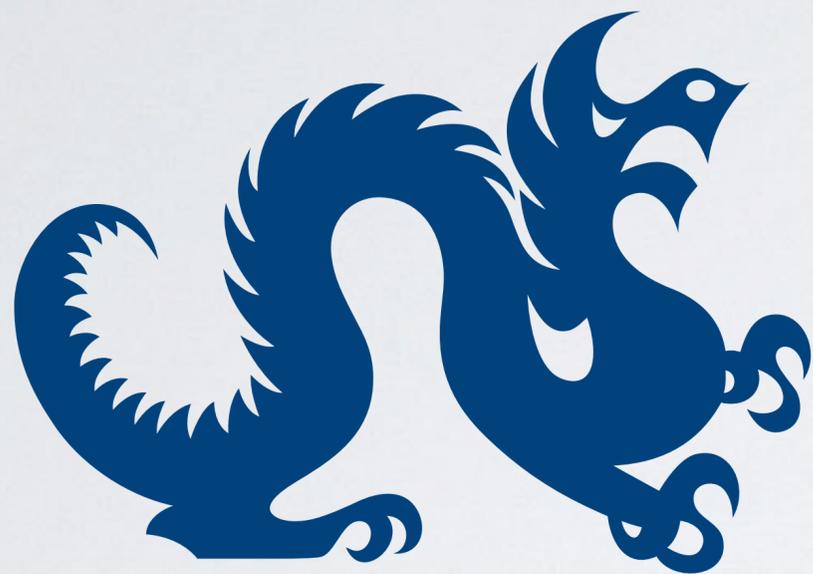
Youngmoo E. Kim, *Director*

ExCITe Center of Drexel University

ykim@drexel.edu

@youngmoo

creating-at-a-distance.com



DREXEL UNIVERSITY

ExCITE Center

Expressive and Creative
Interaction Technologies

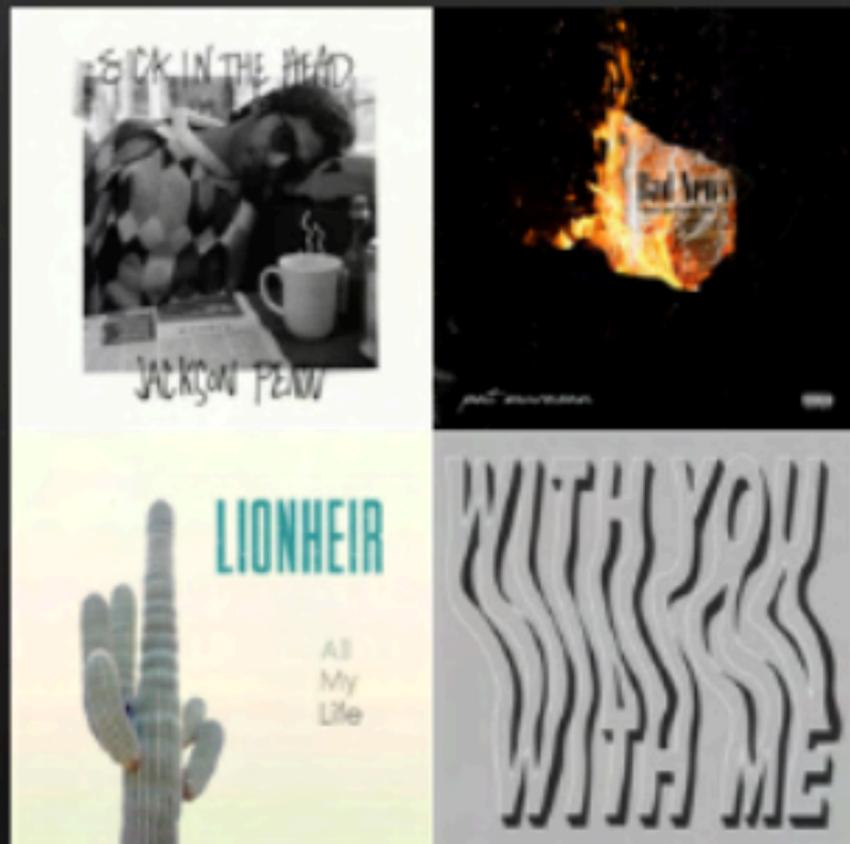
DREXEL.EDU/EXCITE

@EXCITECENTER

Music-IR (MIR)

Music Information Retrieval

ISMIR: International Society for MIR



PLAYLIST

Discover Weekly

New Music For You To Discover!

Created by **Lori Pineda** • 25 songs, 1 hr 22 min

PLAY

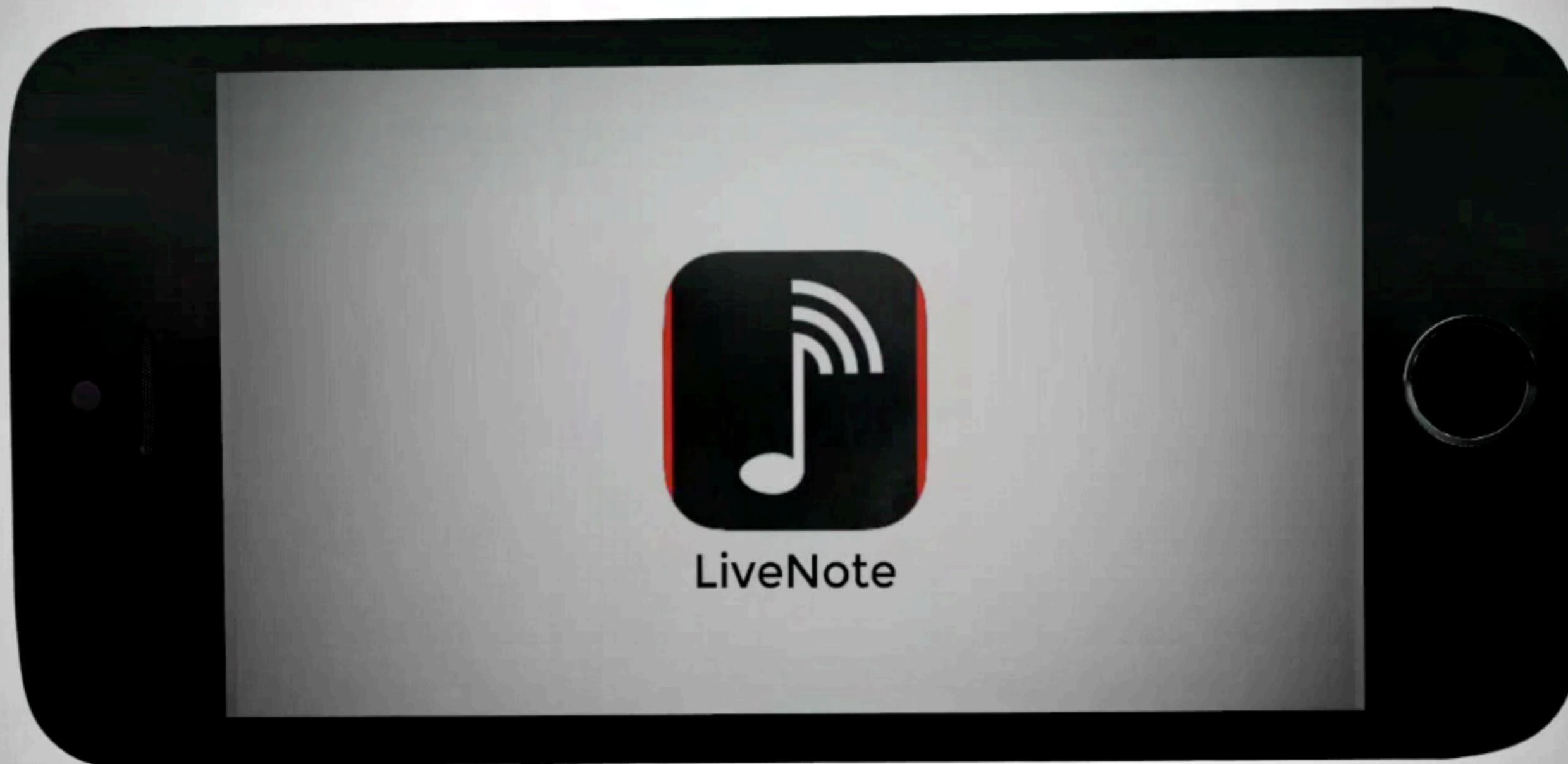


FOLLOWERS
21,056

Filter

	TITLE	ARTIST	ALBUM	
♡	Sick in the Head	Jackson Penn	Sick in the Head	2019-10-03
♡	Bad News	EXPLICIT Pat Muresan	Bad News	11 days ago
♡	All My Life	Lionheir	All My Life	3 days ago
♡	Whisper Wait	Fosternicole	With You With ...	2019-10-03

This signature event of the
2012 Philadelphia Science Festival
was a unique collaboration between
Drexel's Music & Entertainment Technology Lab
and a world-class jazz quartet, featuring...



LiveNote: Concert app with The Philadelphia Orchestra
philorch.org/livenote

Computational Instruments

NIME: New Interfaces for Musical Expression

Inquire

Marc Cary on a Magnetic Resonator Piano
Erik Satie – Gymnopédie No.1



This is

DRUMHENGE

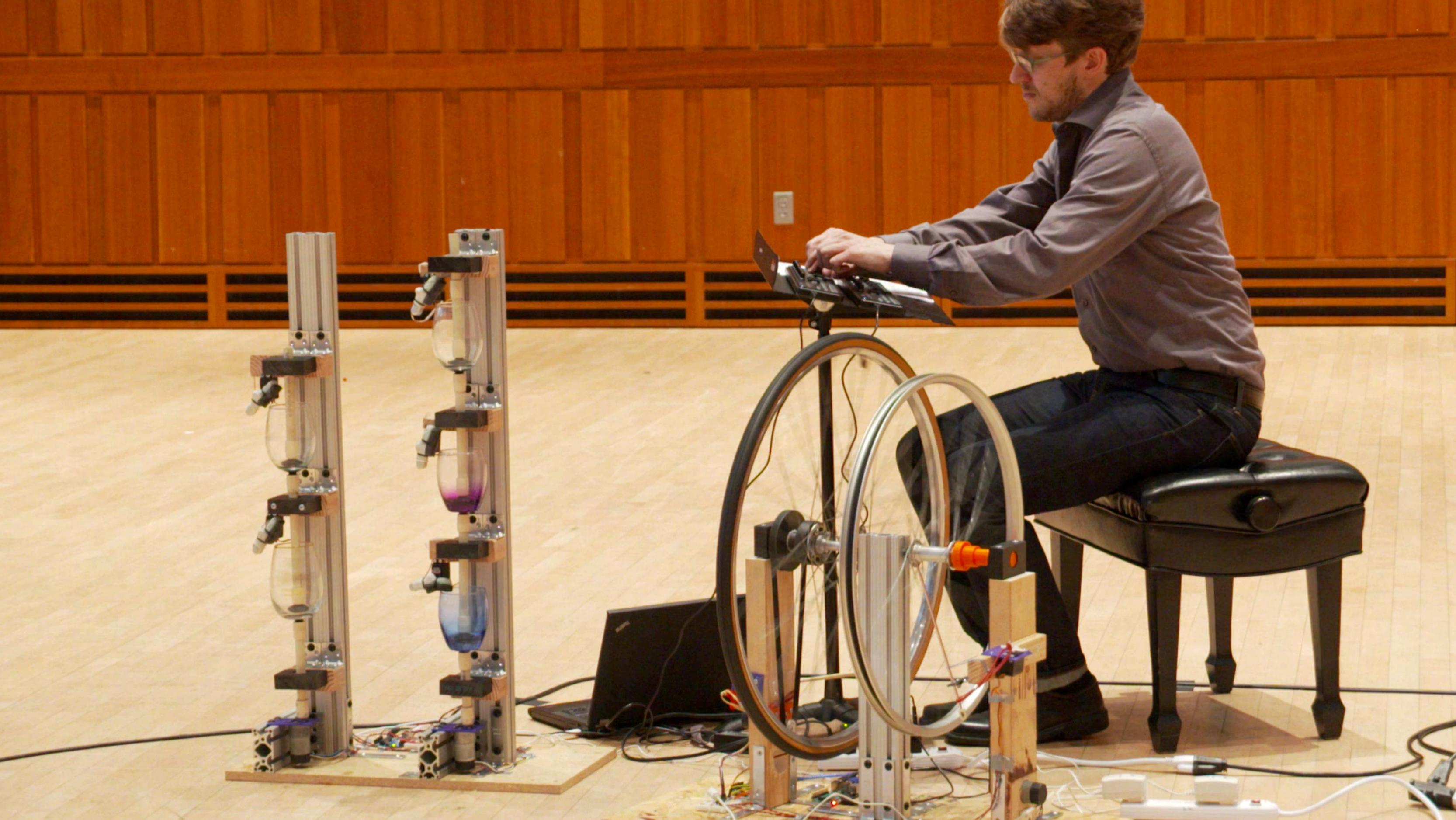
A New Musical Instrument

KNIGHT  ARTS



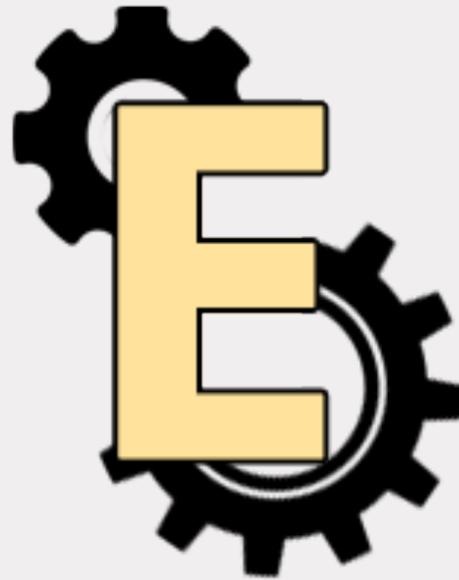
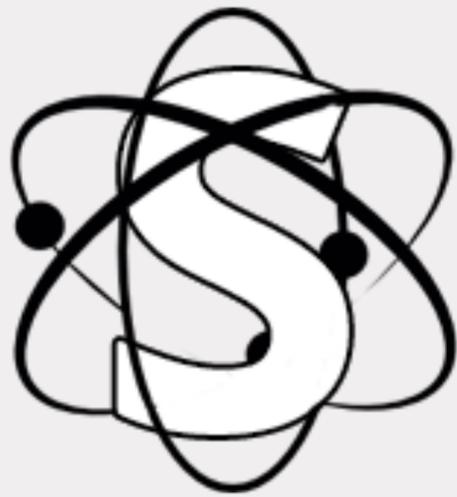
Sophia's Forest

music: Lembit Beecher, libretto: Hannah Moscovitch

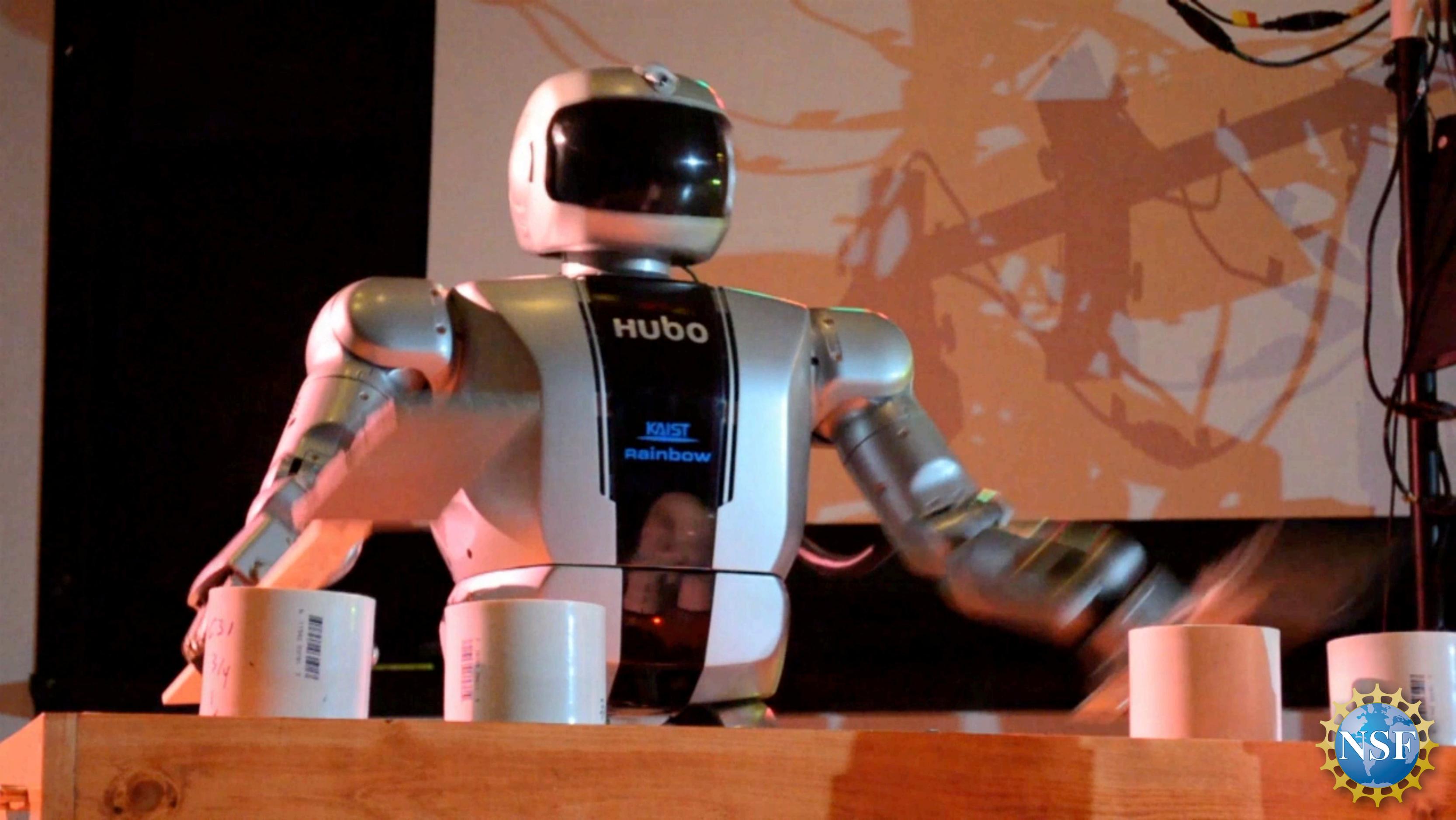




sophia's wide awake dreams



Science . Tech . Engineering . *Arts* . Math



Hubo

KAIST
rainbow





Summer Music Technology
Class of 2007





Summer Music Technology

Class of 2008



This laboratory was made possible
through a generous gift from
The Kealey Family - Earl Alabach Trust

Summer Music Technology
Class of 2009



Summer Music Technology
Class of 2010



Summer Music Technology
Class of 2011

Summer Music Technology

Class of 2012





Summer Music Technology

Class of 2013



Summer Music Technology
Class of 2014



Summer Music Technology
Class of 2015



Summer Music Technology
Class of 2016



Summer Music Technology
Class of 2017



Summer Music Technology
Class of 2018



Summer Music Technology

Class of 2019

A
STEAM
POWERED PRODUCTION
SCI . TECH . ENGR . *ARTS* . MATH

What was the **hardest** part of this project
for you?



Young Dragons 2019
Summer STEAM Program

APPLIED Digital

SIGNAL processing

with YOUNGMOO KIM

bit.ly/appliedDSP

▾ Moving average convolution

To do this with changing axis limits, we need to completely redraw the figure at each animation frame.

```
1 f_start = 4548
2 #f_len = 32
3 f_len = 295
4 fps = 30
5 mark_size = 20
6
7 M = 9
8 M2 = 4
9 h = np.ones(M) * 0.2
10 #h_line = np.append(np.append(0,h),0)
11 h_scale = 0.12
12 s_scale = 2
13
14 frame = s_scale * s_h[f_start:f_start+f_len + M]
15 t = np.arange(f_len + M) #/fs
16 u_s = signal.lfilter(h/2, 1, frame)
17
18 fig = plt.figure(figsize=(20,10))
19 ax1 = plt.axes(xlim=(-1,35), ylim=(-0.03, 0.02))
20 y_offset = -0.02
21 #ax2 = ax1
22
23 win, = ax1.plot([],[],'y.',markersize=mark_size)
24
25 # animation function, but redraw each frame
26 def animate(n, sig, num_frames, ax_on=True, save_figs=False):
27     fig.clear()
28     if n>120:
29         ax1 = plt.axes(xlim=(-1,280), ylim=(-0.045, 0.025))
30     elif n>90:
31         ax1 = plt.axes(xlim=(-1,n+10+5*(n-90)), ylim=(-0.045, 0.025))
32 #     elif n>60:
33 #         ax1 = plt.axes(xlim=(-1,n+10), ylim=(-0.03 + (60-n)/1500, 0.01 + (n-60)/2000))
34     elif n>25:
35         ax1 = plt.axes(xlim=(-1,n+10), ylim=(-0.045, 0.025))
36     else:
37         ax1 = plt.axes(xlim=(-1,35), ylim=(-0.045, 0.025))
38
39     if ax_on == False:
40         # turn off axis spines
41         ax1.xaxis.set_visible(False)
42         ax1.yaxis.set_visible(False)
```



STAY AT HOME CHOIR

Caledonia

Featuring VOICES 8



Virtual Chorister



alun-gen Mil - li - o-nen! Die sen
ü-ber'm Ster-nen-zelt muß ein lie -

Image: Stay at Home Choir 4 stayathomechoir.com

B Brü - der! ü-ber'm Ster-nen-zelt muß ein lie - ber Va - ter woh-nen.

619 S Brü - der! ü-ber'm Ster-nen-zelt *sf* Muß ein lie - ber Va - ter wohnen.

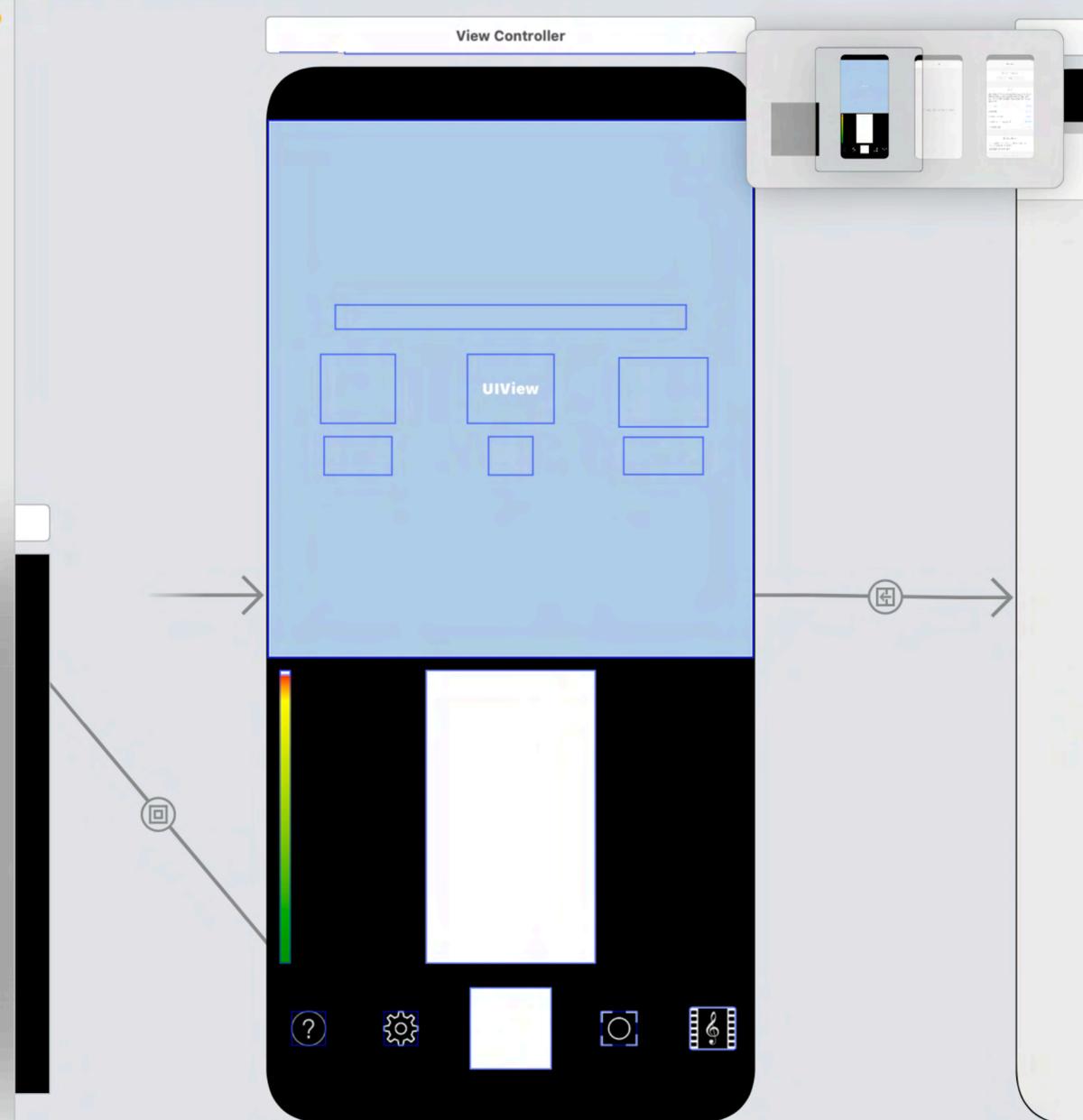
A Brü - der! ü - ber'm Ster-nen-zelt muß ein lie - ber Va - ter wohnen.

T Brü - der! ü - ber'm Ster-nen-zelt muß ein lie - ber Va - ter wohnen.

B Brü - der! ü - ber'm Ster-nen-zelt muß ein lie - ber Va - ter wohnen.

An internal error occurred. Editing functionality may be limited.

- View Controller Scene
 - View Controller
 - View
 - Safe Area
 - Video View
 - Capture Button
 - InfoButton
 - Preview View
 - Select video...
 - Settings
 - ViewToggle
 - Audio Level View
 - Peak Indicator
 - URLView
 - Message Label
 - FlipButton
 - InfoView
 - SAHC Table View
 - Constraints
 - Navigation Item
 - First Responder
 - Exit
 - Storyboard Entry Point
 - Embed segue to "AV Player..."
 - Show segue "ShowSettings..."
 - Settings Scene
 - Navigation Controller Scene
 - AV Player View Controller Sc...



```

1528
1529 // Try to force builtInMic over headsetMic to solve clicking
1530 // issue on iPhone 6s
1531 // if iPhone {
1532 //     do {
1533 //         try audioSession.setPreferredInput(input)
1534 //     }
1535 //     catch {
1536 //         print(audioSession.preferredInput)
1537 //     }
1538 // }
1539 //
1540 // let dataSources = audioSession.inputDataSources
1541 // print(dataSources)
1542 // for source in dataSources! {
1543 //     if source.dataSourceName == "Front" { // Good for iPhones,
1544 //         bad for iPads
1545 //         if (iPhone || !iPadProUSB) {
1546 //             do {
1547 //                 try audioSession.setInputDataSource(source)
1548 //             }
1549 //             catch {
1550 //                 print("Could not set input dataSource to
1551 //                 preferred microphone")
1552 //             }
1553 //             do {
1554 //                 // On iPhone 11 (Pro, at least), Front
1555 //                 // Omnidirectional mode works better
1556 //                 if iPhoneX {
1557 //                     try
1558 //                         source
1559 //                             .setPreferredPolarPattern
1560 //                             (AVAudioSession.PolarPattern(rawValue:
1561 //                             "Omnidirectional"))
1562 //                 }
1563 //                 else {
1564 //                     // On iPhone 6s and iPad Pro first gen,
1565 //                     // only Cardioid fixes clicking issue
1566 //                     try
1567 //                         source
1568 //                             .setPreferredPolarPattern
1569 //                             (AVAudioSession.PolarPattern(rawValue:
1570 //                             "Cardioid"))
1571 //                 }
1572 //             }
1573 //             catch {
1574 //                 print("Couldn't set polar pattern")
1575 //             }
1576 //         }
1577 //     }
1578 //     else if source.dataSourceName != "Back" {
1579 //         // Not Front or Back: Most devices use this (Right, Top,

```

Creating ... at • a ... Distance

No. 12 • 2020-07-29

[View this email in your browser](#)

A weekly newsletter from [ExCITe Center](#) Director Youngmoo Kim about novel creative & collaborative works in the time of social distancing, focusing on Philadelphia. Much of it involves tech, but not all of it.

[Subscribe Here](#)



creating-at-a-distance.com

Amalgamation: Mashup

Innovation

Communication

Culture change

What's "optimal"?

- Prof. Alan Oppenheim

THANK YOU

Youngmoo E. Kim

ykim@drexel.edu

[@youngmoo](#)

creating-at-a-distance.com