Reimagining Hyperinstruments
A Special Edition of *Musical Aesthetics and Media Technology* (MAS.825)

Prof. Tod Machover
TAs: Manaswi Mishra and Nikhil Singh
Fall term 2021, W 2-4:30 pm (3-3-6)
Study Past & Future of Hyperinstruments
Study Past & Future of Hyperinstruments

Explore many related issues of music+tech++
Study Past & Future of Hyperinstruments
Explore many related issues of music+tech++
Combine listening, analysis/discussion, experimentation, performance, collaboration
Brief History of Electronic Music
Luigi Russolo

L’Arte dei Rumori
Lev Theremin

Clara Rockmore
Kontakte (1958-1960)
Iannis Xenakis
Iannis Xenakis
Suzanne Ciani

Buchla Synthesizer
Wendy Carlos

Switched-on Bach

Moog Synthesizer
Stanford (CCRMA)

Pierre Boulez

Andy Moorer

John Chowning

Max Mathews
John Chowning

FM synthesis

Yamaha DX-7
July 6 2021

Listen To Your Body Choir by team M.O.G.I.I.7.E.D. wins AI Song Contest 2021
FUSIONE FUGACE
Venice Biennale
(1982)
VALIS
(1987)
Hyperinstruments
Death and the Powers: The Robots’ Opera

by Tod Machover | Libretto by Robert Pinsky
What’s Next?
What’s Next?

More beautiful
More subtle
More responsive
More independent
More intelligent
More shocking!
Syllabus
Introduction
Syllabus

September 22

VALIS 1

Joe Chung
Syllabus

September 29

VALIS 2

Project 1
Field Trip
to see Karsten Schuhl’s superpose

MIT Student Gallery
October 6

Syllabus

Brain Opera

Harmonic Driving
Singing Tree

Gesture Wall
Melody Easel

House of Music, Vienna
Syllabus

October 6

Brain Opera

Joe Paradiso

The Brain Opera Technology: New Instruments and Gestural Sensors for Musical Interaction and Performance

Will Oliver

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Keywords: Brain Opera, human-computer interface, multimodal input devices, electronic music interfaces, interactive music systems, percussion interfaces, interactive dance, electric field sensing, capacitive sensing.
Virtuosity vs. Everyone

Deriving Musical Control Features from a Real-Time Timbre Analysis of the Clarinet

by

Eran Baruch Egoz

Submitted to the Department of Electrical Engineering and Computer Science in Partial Fulfillment of the Requirements of the Degrees of Bachelor of Science in Electrical Science and Engineering and Master of Engineering in Electrical Engineering and Computer Science at the Massachusetts Institute of Technology January 1995

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January 20, 1995

Certified by

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Thesis Supervisor

Eran Egozy
Syllabus

October 20

Hyperconnected Concerts

Nikhil Singh
AI/ML & Hyperinstruments

October 27

Manaswi Mishra

Akito van Troyer
Syllabus

Death and the Powers

TOD MACOVER
DEATH AND THE POWERS

JAMES MADDALENA baritone
JOELE HARVEY soprano
PATRICIA RISLEY mezzo-soprano
HAL GAZALET tenor
DOUG DODSON countertenor
DAVID KRAVITZ baritone
TOM McNICHOLS bass
Syllabus

November 3

Death and the Powers

Making Musical Magic Live
Inventing modern production technology for human-centric music performance

Benjamin Arthur Phillips Bloomberg
Bachelor of Science in Computer Science and Engineering
Massachusetts Institute of Technology, 2012
Master of Sciences in Media Arts and Sciences
Massachusetts Institute of Technology, 2014

Submitted to the Program in Media Arts and Sciences,
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November 10

Wild Ideas & Project 2

Syllabus
Final Projects: Proposals
November 24

No Class

Thanksgiving Break
Final Projects: Piece Demos

December 1
December 8-10

Final Projects:
Setup & Rehearsals
Final Projects: Dress Rehearsal & Performances
Project Reminder

Sept. 15-29

Project 1
Project Reminder

Project 1  A MINUTE OF MUSIC

For those without any music/audio experience:
Make a 1 minute piece of music by any means, that uses recorded sounds, etc.

For those with some music/audio experience:
Make and perform a 1 minute piece of music with some kind of real-time system (e.g. Max/MSP, Web tech, Hyperproduction+REAPER, openFrameworks, etc.)
Project Reminder

Sept. 15-29

Project 1

Oct. 20 - Nov. 10

Project 2
Project 2  HYPERCONNECTED CONCERTS

• Form a team (MIT + Harvard + Berklee?)

• Put together a **5-minute** virtual concert experience (e.g. with 1-3 performers from class)

• Create an experience that *augments* the traditional live-stream concert format with whatever technology/resources available (supplemented by workshop on interactive and web technologies)

• Perform the concert live in class, perhaps connected to Berklee students in Boston
Project Reminder

Sept. 15-29 
Project 1

Oct. 20 - Nov. 10 
Project 2

Nov. 17 - Dec. 11/12 
Final Project/Performance
Project Reminder

Final Projects/Pieces/Performances

TBD
Tech Workshops & Office Hours

First TWO are:

Monday, September 20
Monday, September 27
Possible “Field Trips”

- Victor Wooten @ BSO
- Class screening of “Sisters with Transistors” documentary
- Conrad Tao @ Longy
- Claire Chase Harvard Faculty Recital (Sep 29)
- Laurie Anderson’s “virtual” Harvard Norton Lectures (6 Oct, Nov 10, Dec 8)
- HYDRA @ Harvard (Dec 4 and 5)
- Visit(s) to Berklee College of Music
Assignment for Next Week

Listen to full VALIS recording, on CD or via links

Study CD booklet (physical or PDF)

Read Hyperinstrument Progress Report (at least pages 1-23)

Watch “Big Thinker” Video
Reminders

Class website: reimhyp.media.mit.edu

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Admin/Producer  
Priscilla Capistrano (priscill@media.mit.edu)

Tod (tod@media.mit.edu)
Reminders

You must be fully registered; no listeners.

Must fill out our Google form (on website).

Harvard students need MIT ID/Covid-Pass.
Reminders

Introductions!