
Digital Instrument Building

and

The Laptop Orchestra

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The danger of the piano, and its glory, is that the pianist can feel the music with his whole body without having to listen to it.

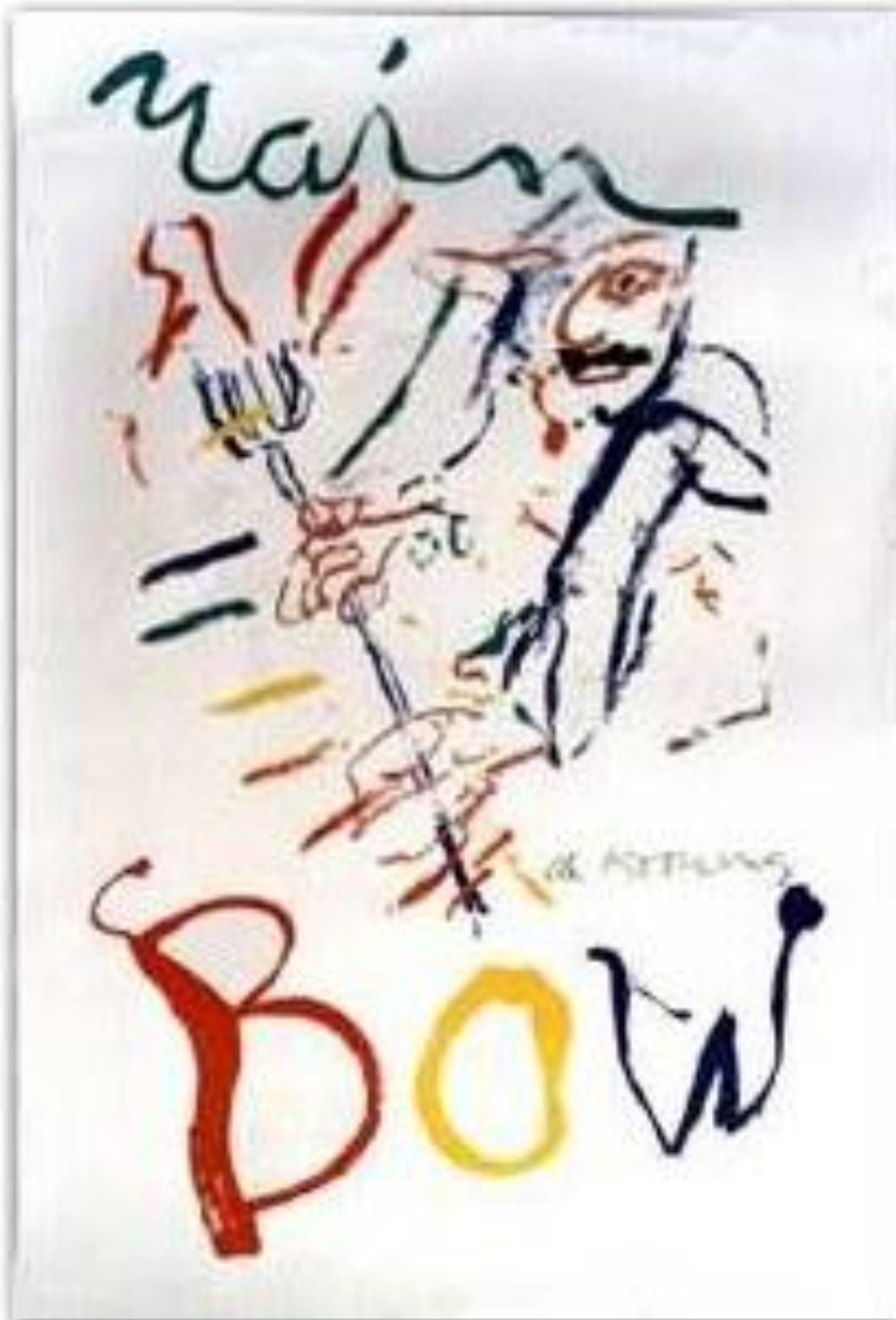
—Charles Rosen, “On Playing the Piano,” *The New York Review*, 10.21.99

Pianists do not devote their lives to their instrument simply because they like music..... There has to be a genuine love of the mechanics and difficulties of playing, a physical need for the contact with the keyboard.... This inexplicable and almost fetishistic need... is, indeed, conveyed to the audience and becomes necessarily part of the music.

—Charles Rosen, “On Playing the Piano,” *The New York Review*, 10.21.99

The traditional construction of the keyboard—its arrangements of black and white keys—has had a largely unrecognized influence on the history of harmony, not completely benign, because of most composers' dependence on the piano for inspiration.... Playing a melody in C-major feels very different under the hand from playing it in F-sharp major.

—Charles Rosen, “On Playing the Piano,” *The New York Review*, 10.21.99



The Myths of *Fanitullen*
and the
“Possessed” Fiddle

Devil at the Keyboard
(tribute to Thelonius Monk)

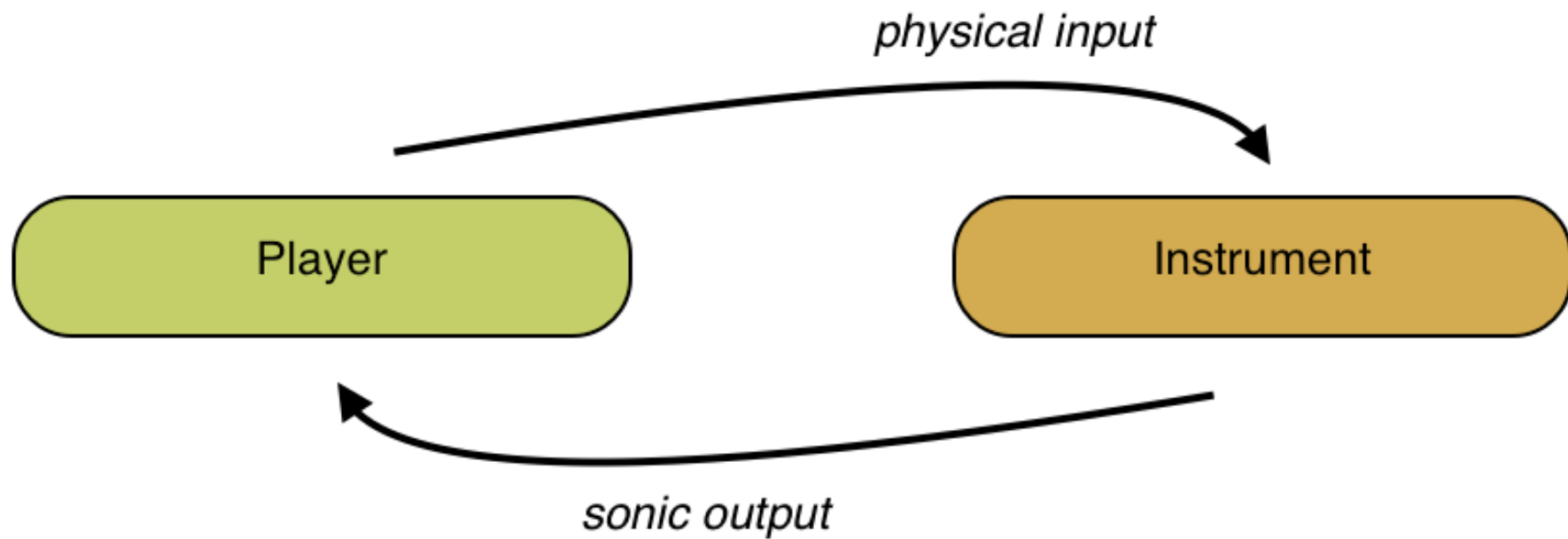
Willem de Kooning
1976

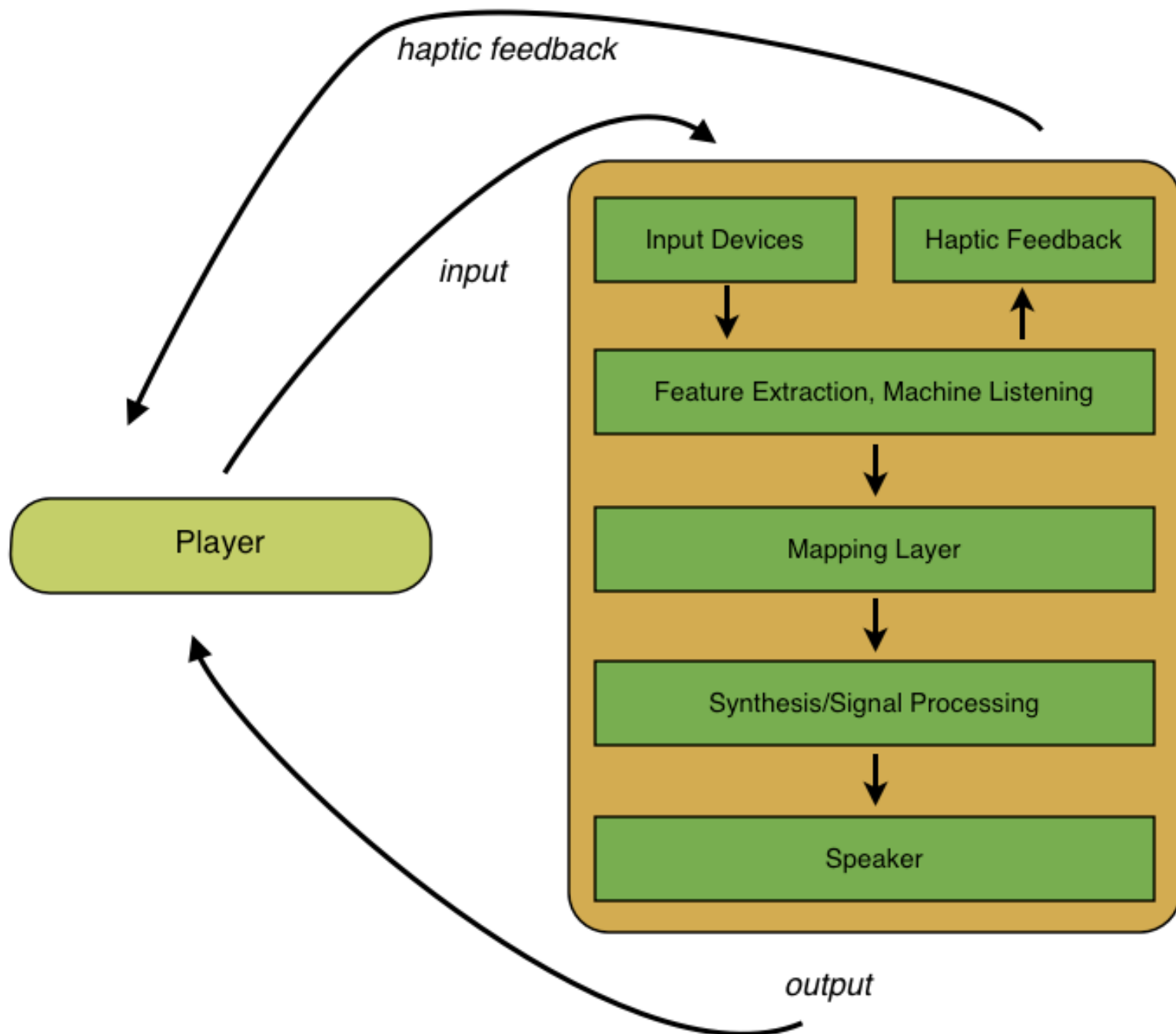




“The bass doesn't appeal to me. I am the bass.” Edgar Meyer.

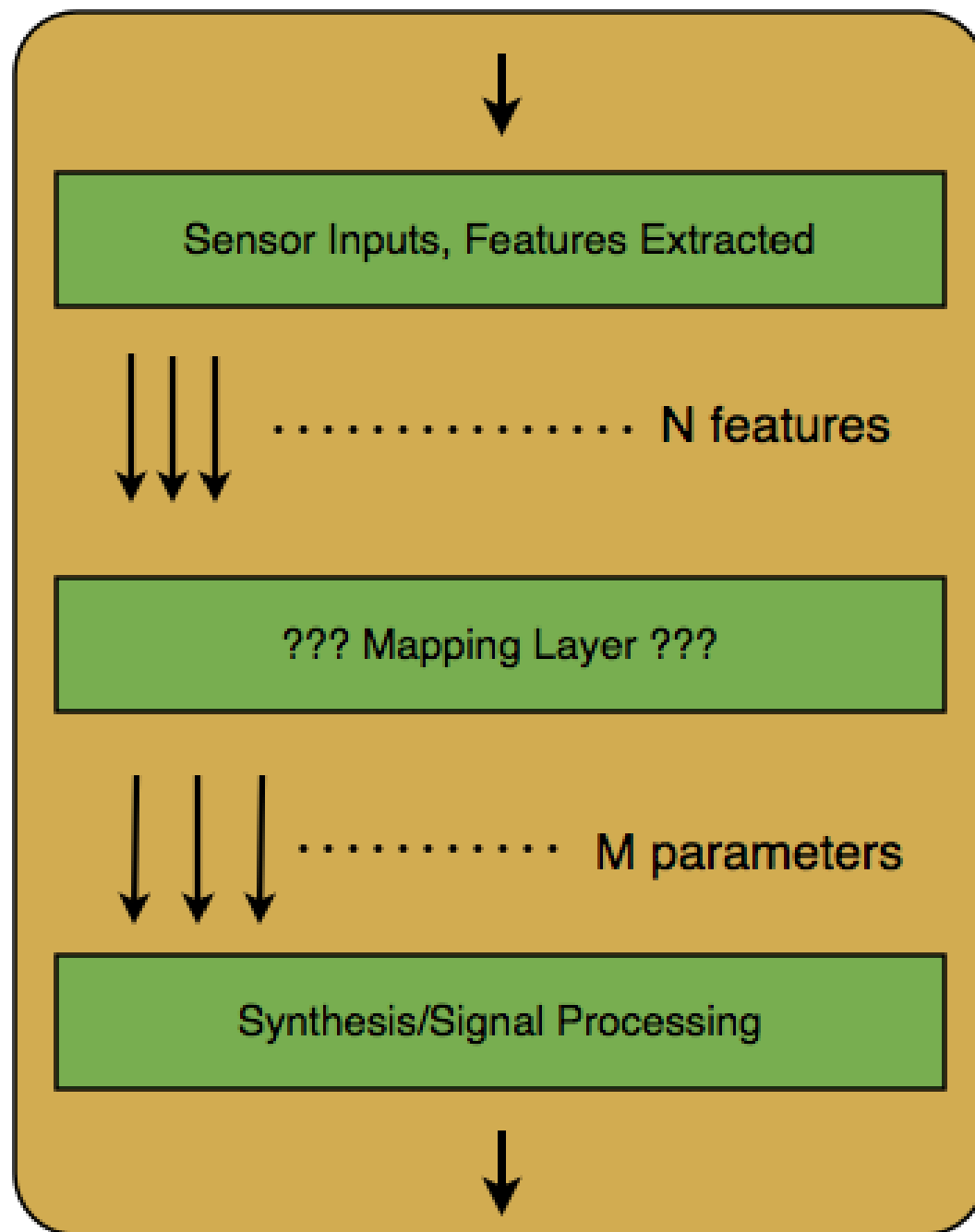












The Wekinator

- created by Rebecca Fiebrink, Princeton CS
- enables rapid and interactive application of various machine learning algorithms to digital musical instrument building

Wekinated Drum Machine Demo



The Wekinator

- $N \Rightarrow M$ mapping problem
- Golf Controller \Rightarrow Blotar Physical Model example



Wekinated Blotar Demo



The Wekinator

- play-along learning
- iterative, intuitive... fun!
- goal oriented, but goal may not be predetermined.

In Action:

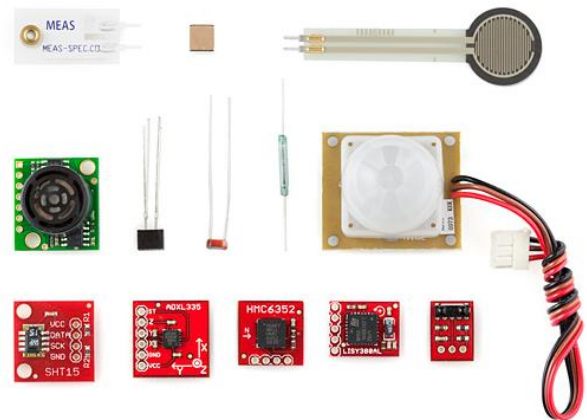
Clapping Machine Music Variations

- Two tether-blotars, after extensive revision
- Six other laptopists on other instruments
- Two violins, in this case
- An excerpt:



A laptop orchestra?





PLOrk: The Princeton Laptop Orchestra





Why?

- musically and socially charged context for exploring digital music making and instrument building
 - out of the isolated studio!
- “laboratory” for both music and engineering subject

smule

OCARINA



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smuleannie
Can't Fight This Feelin...
Singers: 2
Gleeks: 1

1:23 ★ 🗣️ ▶▶ SHARE



BoSSA Nova?

- completely wireless:
 - embedded CPU, amplification, power
- “contravielle” acoustic-like speaker system
- friction?

