From Analogue to Digital: Sound Input through the Ages
Automatic transcription

1747 (Grove 1)

19th century
Horizontal loom
Weaving patterns
What is the basis of a Jacquard pattern?

Basic grid, similar to grids for music-typesetting.
Marching-band formations
Analog methods

Threading of loom.

Vertical (Jacquard) loom, 1855

Cards for loom. Rotate as loom turns.

To change pattern, change cards.
Sound generators

Machines to generate sound in order to …

- ...generate music [compose or arrange] on the fly
- ...perform music already composed or arranged
- https://supra.stanford.edu
- ...transcribe music from performance

Organ
(orcherstrion?)
roll

https://www.youtube.com/watch?v=JTk6Knw5Q
Sound generation and capture

c.1800 AD

Franklin’s Glass Harmonica (1761)

https://www.youtube.com/watch?v=ibUOZ3Kp7vk (Dennis James)

Welte-Mignon piano roll (1910)

http://www.youtube.com/watch?v=XMrdhgWR9Zk

CS 275A/Music 253

2023 ELEANOR SELFRIEDGE-FIELD
Music Boxes and Piano Rolls

http://www.pianola.co.nz/index.asp

Reproducing music: Early phonography

Edison home phonograph c. 1914

Edison floor model 1921

Victrola c. 1930
Interfacing hardware to software

Let machines deal with machines (robotics):

Give users independent control of different parts of machine:

Self-playing tuba

Wurlitzer band organ
Basic properties of MIDI (1983-85)

Eight-bit architecture
Files are binary
Highly standardized

Street-organ controller

Harmonipan
Patterns for sound “programs”: Orchestrions

Orchestrion:
https://www.youtube.com/watch?v=955mEk_q8hM

Trautonium (Oskar Sala, 1940-60s; Alfred Hitchcock films)
https://www.youtube.com/watch?v=-tQQEChMq1A

Paris Museum of Mus. Instruments
https://artsandculture.google.com/exhibit/TAKiqDI Fw98kJg
Wabot *from* Keio University, 1984--

*Video:*

http://rraj.rsj-web.org/en_atcl/224