

MULTITOUCH

MEHRFINGER GESTENERKENNUNG

DIY - MULTITOUCH

WE ARE...

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JORDI TOST

M.A. Student

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Interfacer Lab Supervisor

PROJECT AIM

PROJECT AIM

MT Basics using

Computer Vision (Bare Bones)

Physical Computing (Capacitiv & Acoustic)

Open CV (Advanced)

Exhibition 17.10.2014

4 TYPES OF TOUCH(SCREEN) TECHNOLOGY

RESISTIVE

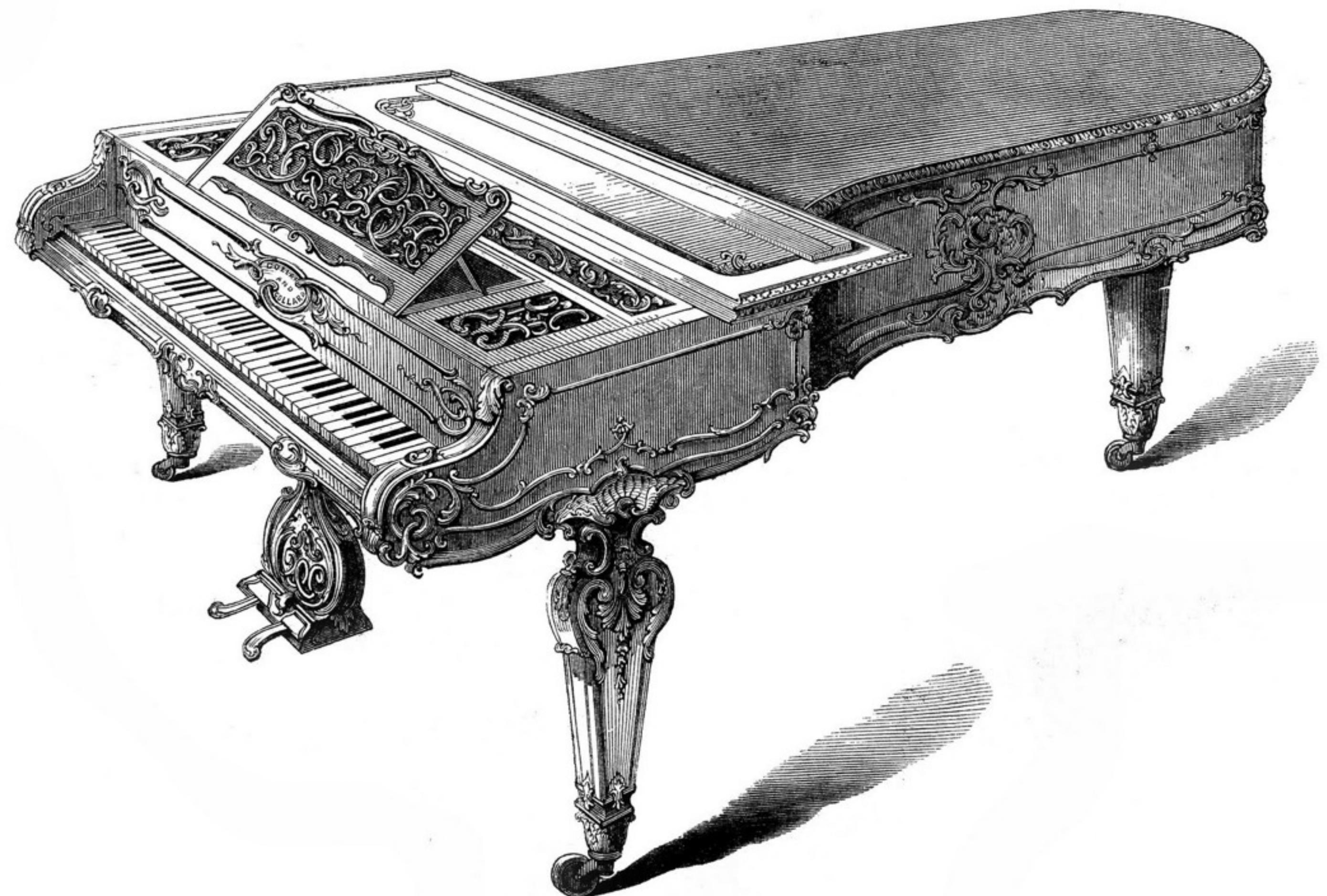
CAPACITIVE

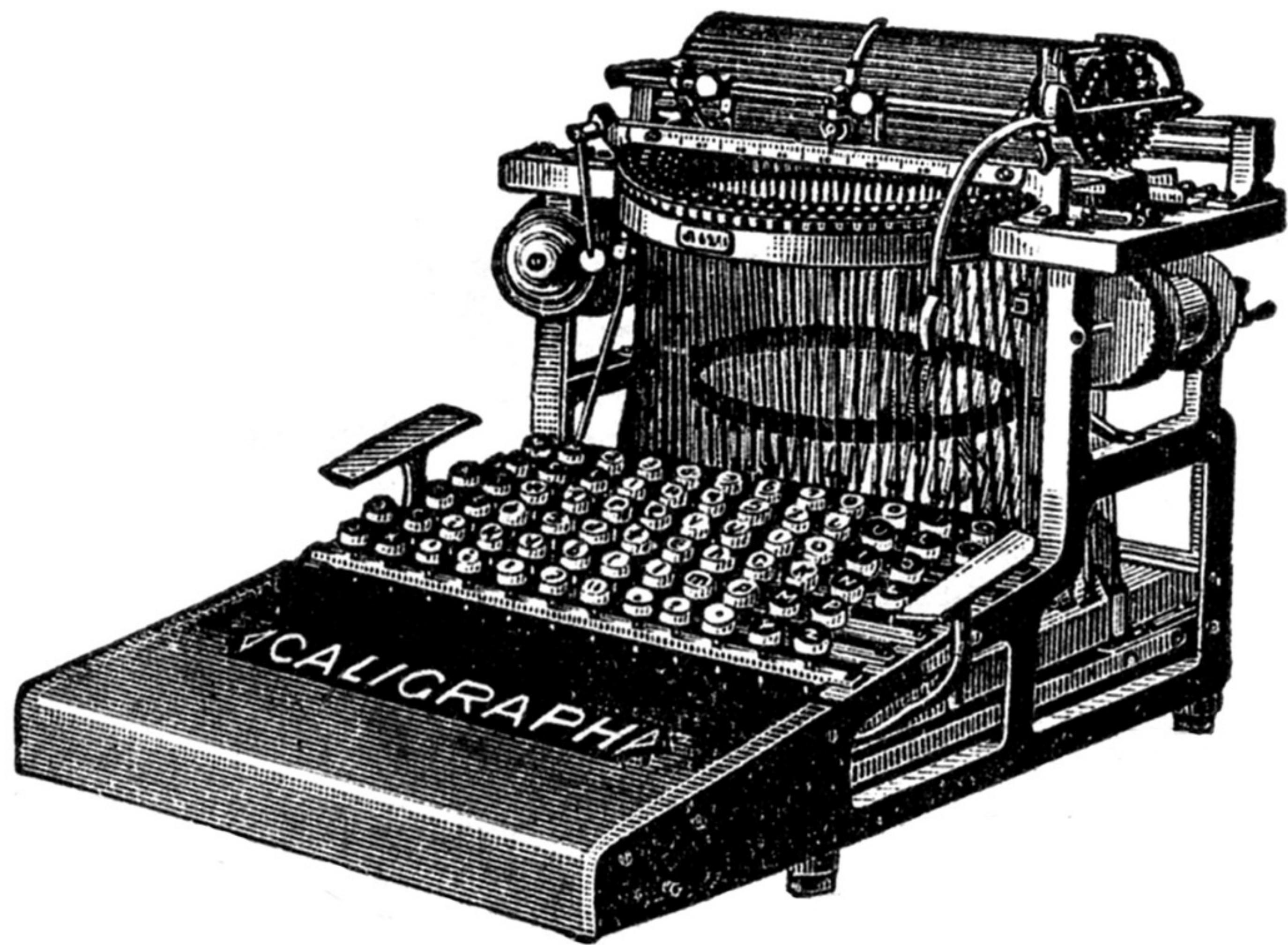
OPTICAL

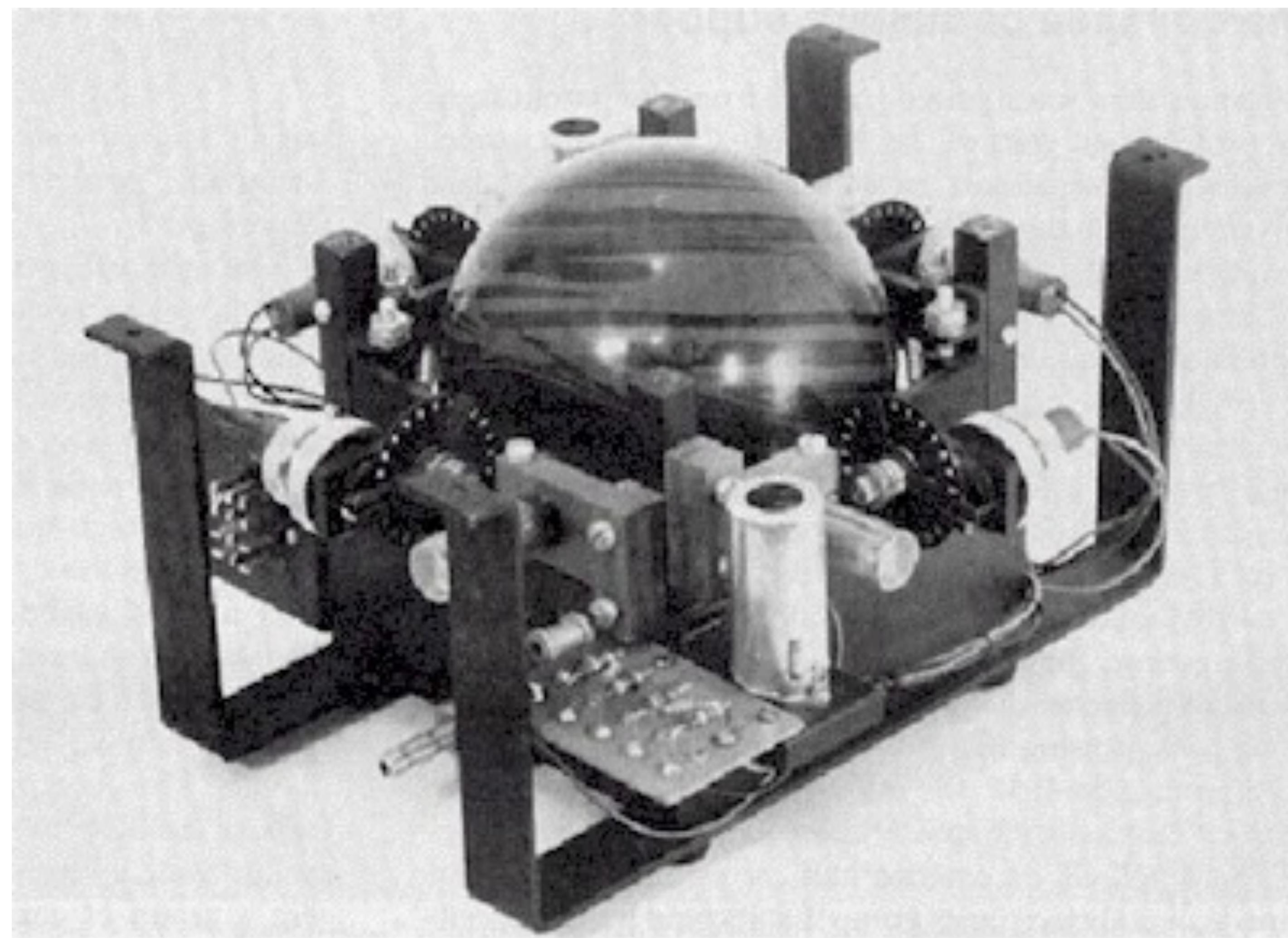
ACOUSTIC

HISTORY OF (M)T

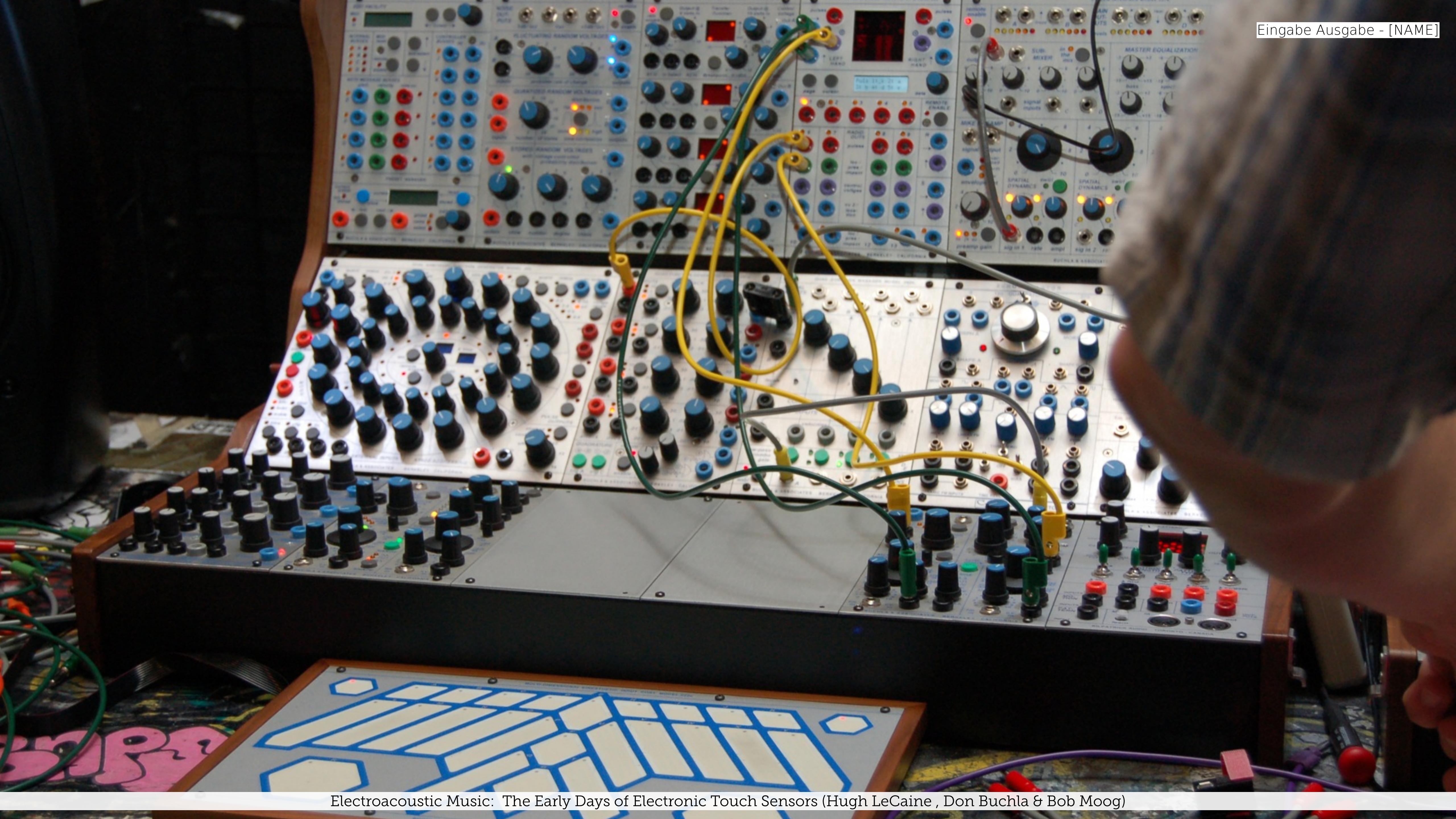
Bill Buxton: Multi-Touch Systems
that I Have Known and Loved







1945: Trackball (Ralph Benjamin)



Electroacoustic Music: The Early Days of Electronic Touch Sensors (Hugh LeCaine, Don Buchla & Bob Moog)



1960s: Mouse (Douglas Engelbart & Bill English)



1965: Touch Screen Technology (E.A. Johnson of the Royal Radar Establishment)

Eingabe Ausgabe - [NAME]



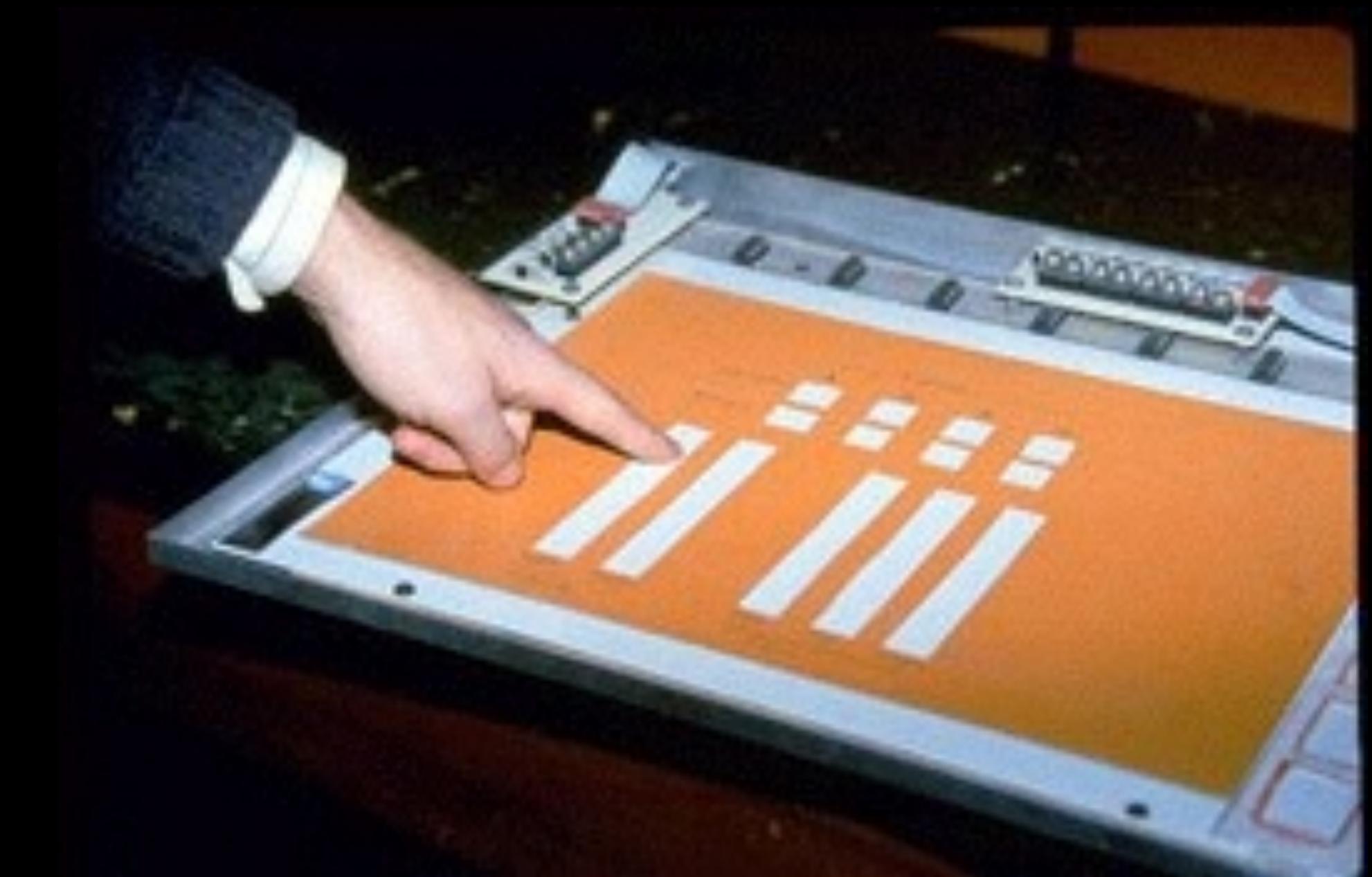
1972: PLATO IV Touch Screen Terminal



1983: Video Place / Video Desk (Myron Krueger)



1984: Multi-Touch Screen (Bob Boie, Bell Labs, Murray Hill NJ)



Multi-Touch Tablet (Input Research Group, University of Toronto Bill Buxton)



1985: Sensor Frame (Carnegie Mellon University Paul McAvinney)

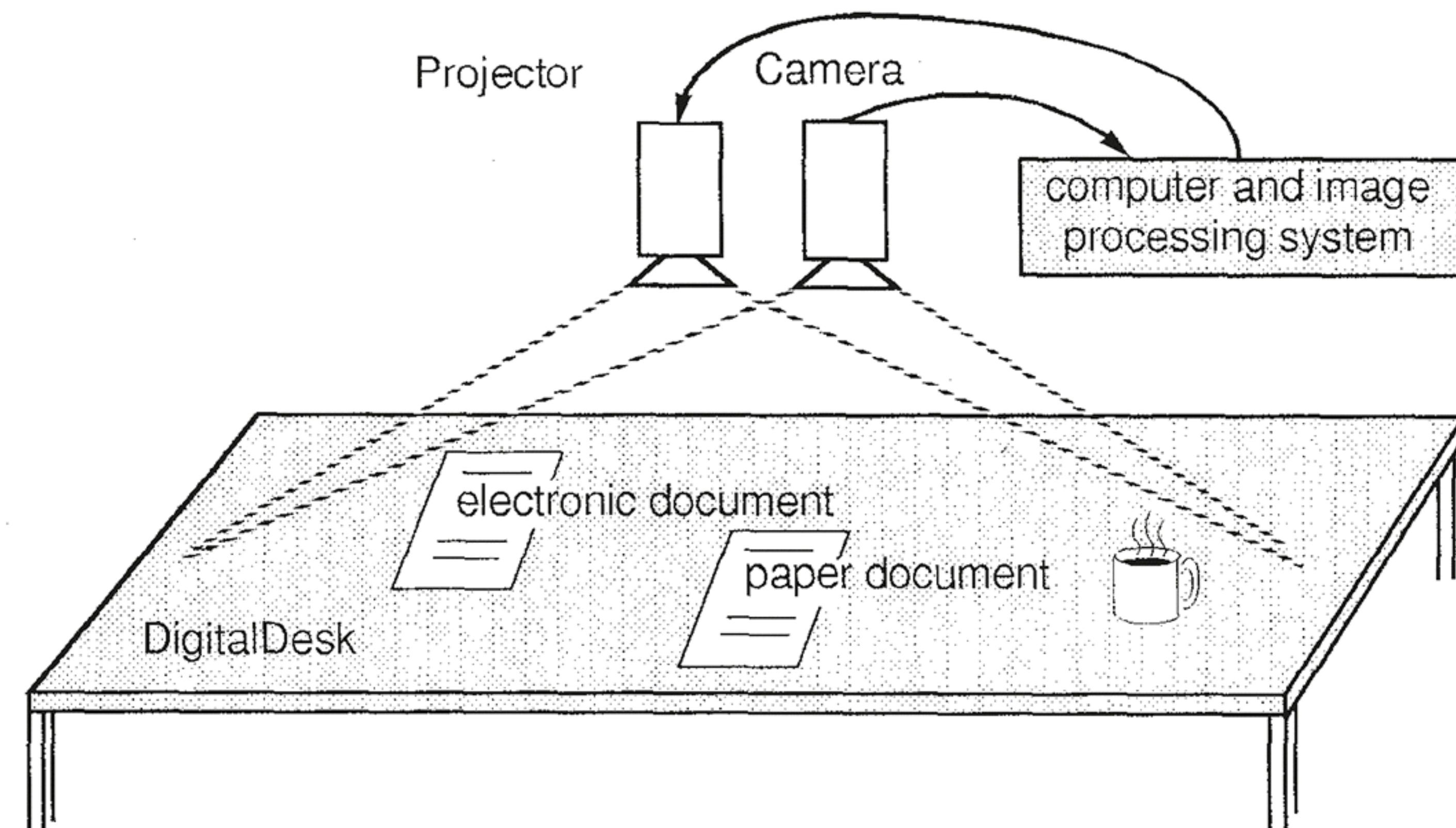


Figure 1. A DigitalDesk system



1992: Simon (IBM & Bell South)

AND MANY MORE

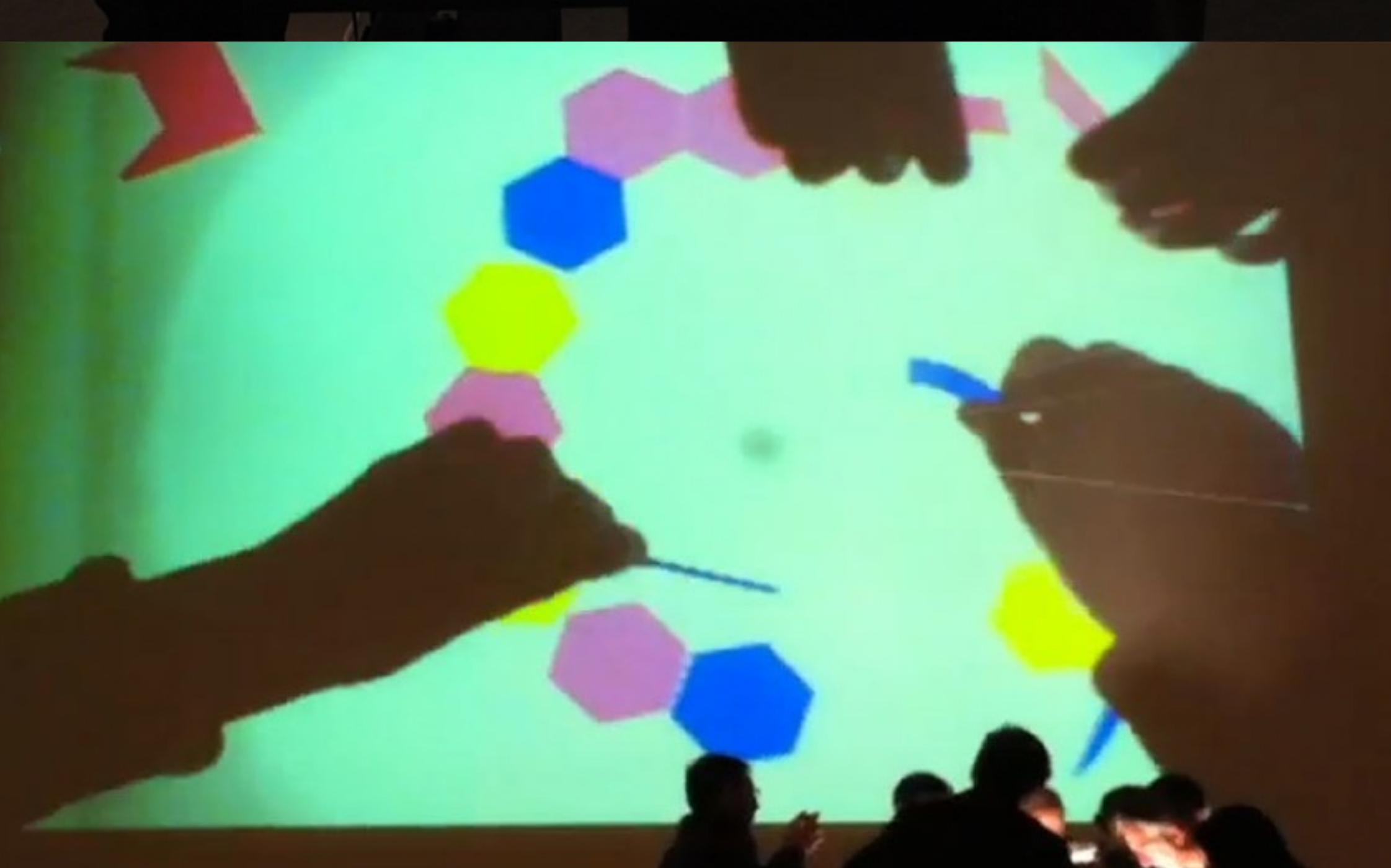
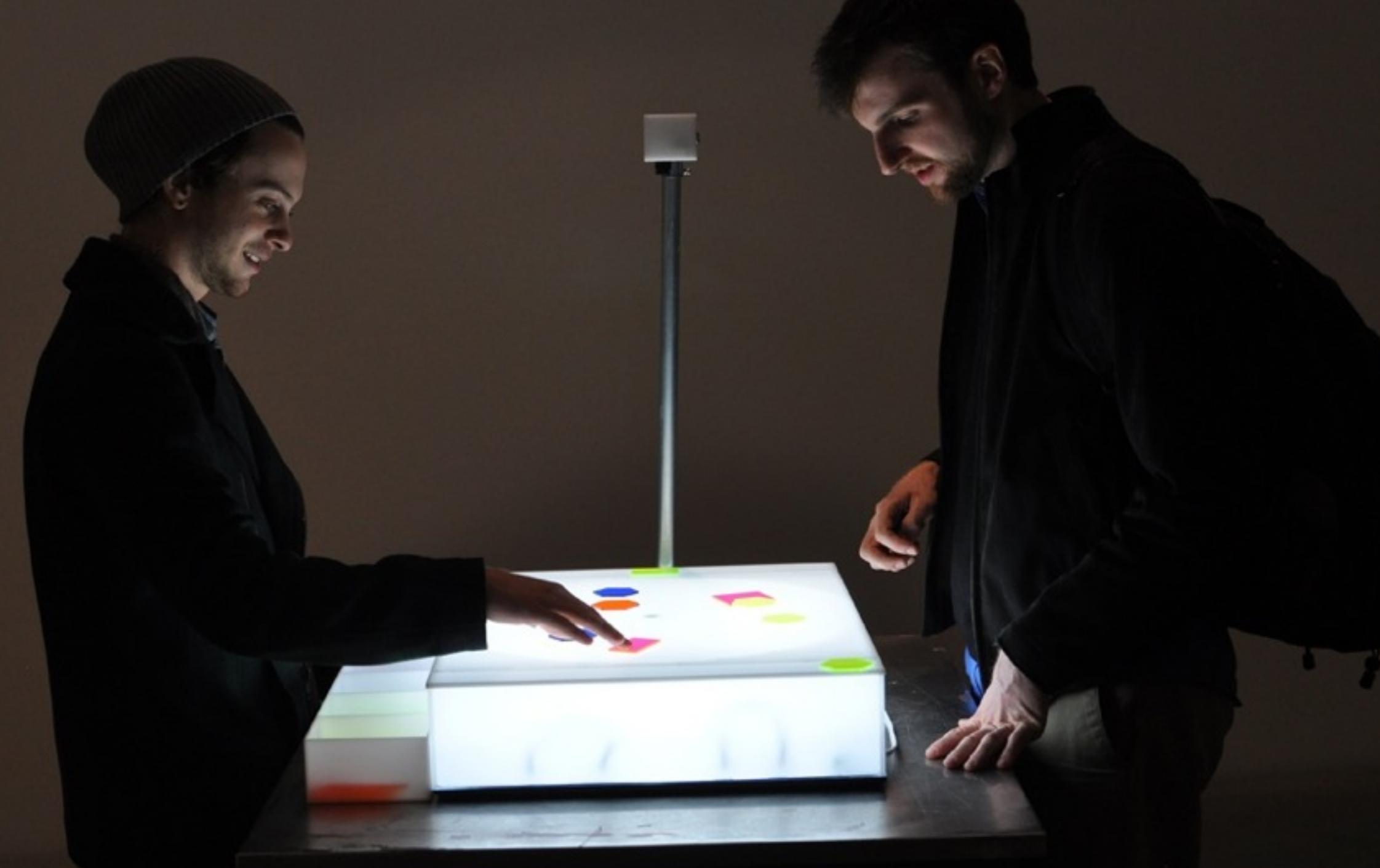
see Bill Buxtons site for further research

1992: Wacom, 1992: Starfire, 1994-2002: Bimanual Research, 1995: Graspable/Tangible Interfaces, 1995/97: Active Desk, 1997: T3, 1997: The Haptic Lens, 1998: Tactex Controls, ~1998: Fingerworks, 1999: Portfolio Wall, 2001: Diamond Touch, 2002: HandGear + GRT. DSI Datotech, 2002: Jun Rekimoto Sony Computer Science Laboratories, 2003: University of Toronto, 2003: Jazz Mutant, 2004: Neonode N1 Mobile Phone, 2004: TouchLight, 2005: Reactable, 2005: Blaskó and Steven Feiner, 2005: PlayAnywhere, 2005: Jeff Han, 2005: Tactiva, 2005: Toshiba Matsusita Display Technology, 2005: Tomer Moscovich & collaborators, 2006: Benko & collaborators, 2006: Plastic Logic, 2006: Synaptics & Pilotfish, 2007: Apple iPhone, 2007: Microsoft Surface Computing, 2007: ThinSight, 2008: N-trig, 2011: Surface 2.0

EXAMPLES

RHYTHMSYNTHESIS

by Ryan Raffa



VIDEO

SCRAPPLE

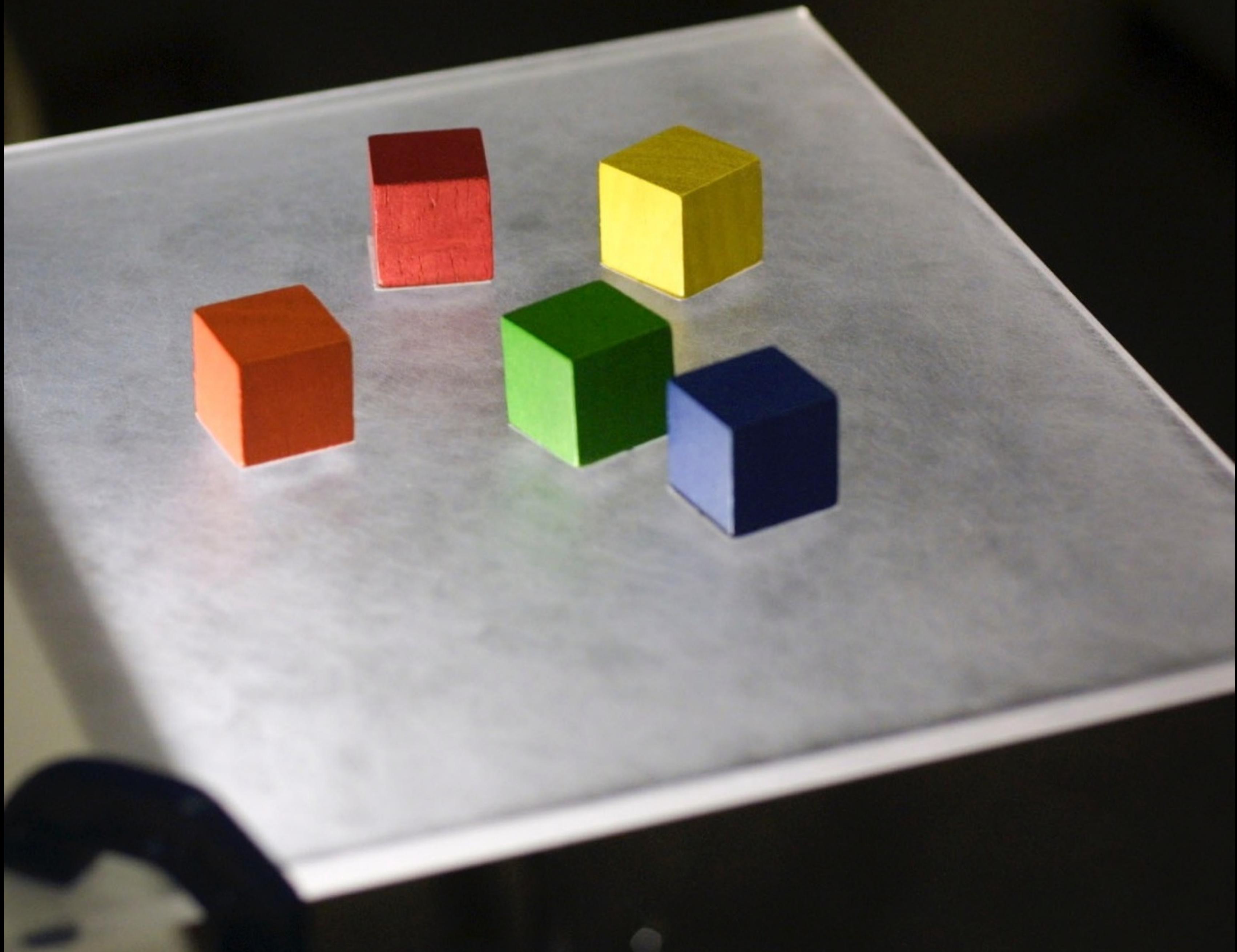
by Golan Levin
and Collaborators



VIDEO & VIDEO

TRACKMATE

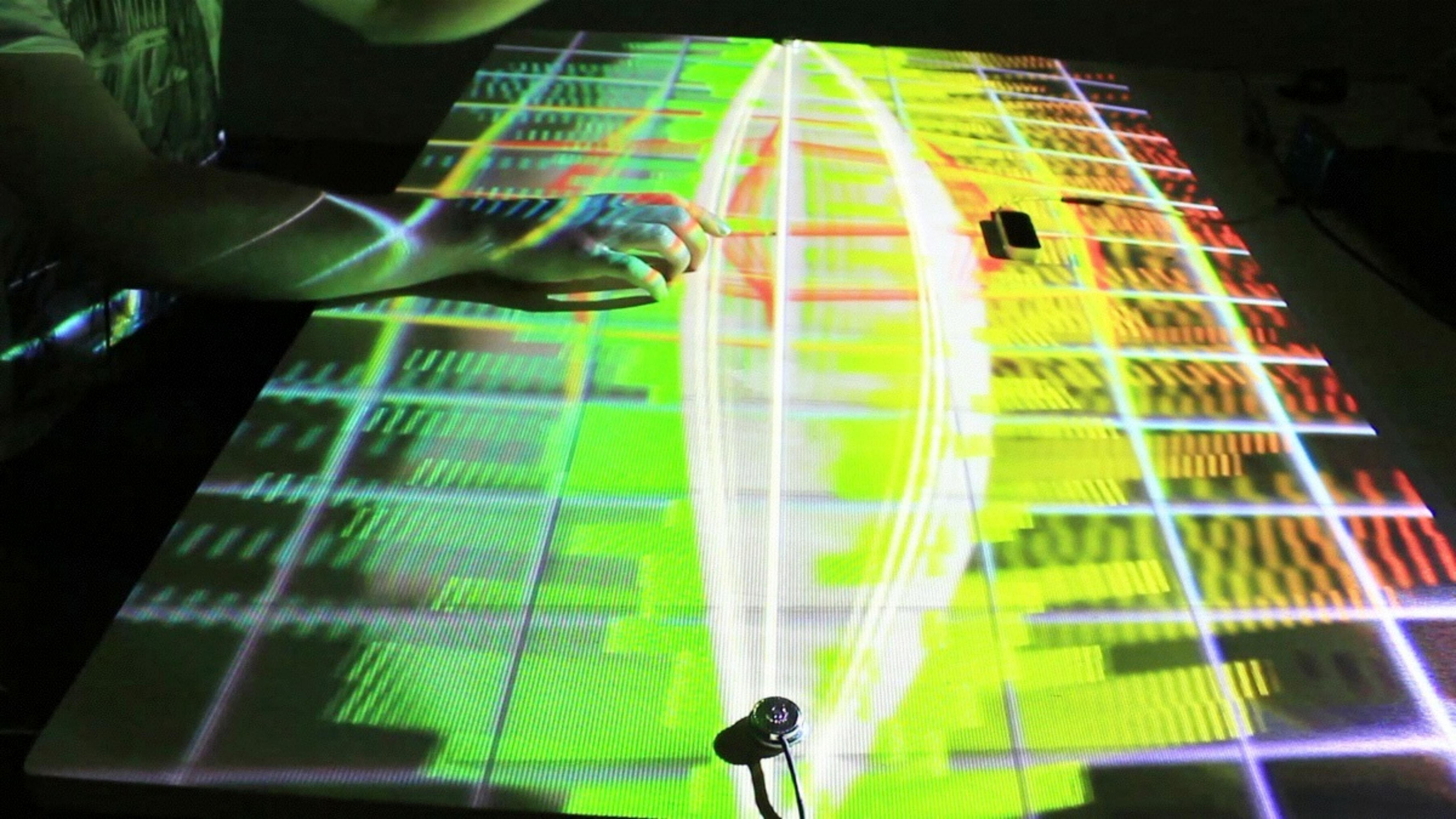
Adam Kumpf, Jean-Baptiste Labrune, Keywon
Chung, Daniel Leithinger, Jamie Zigelbaum, Hiroshi
Ishii / 2009 @ MIT Media Lab - Tangible Media Group



VIDEO

CONTACT

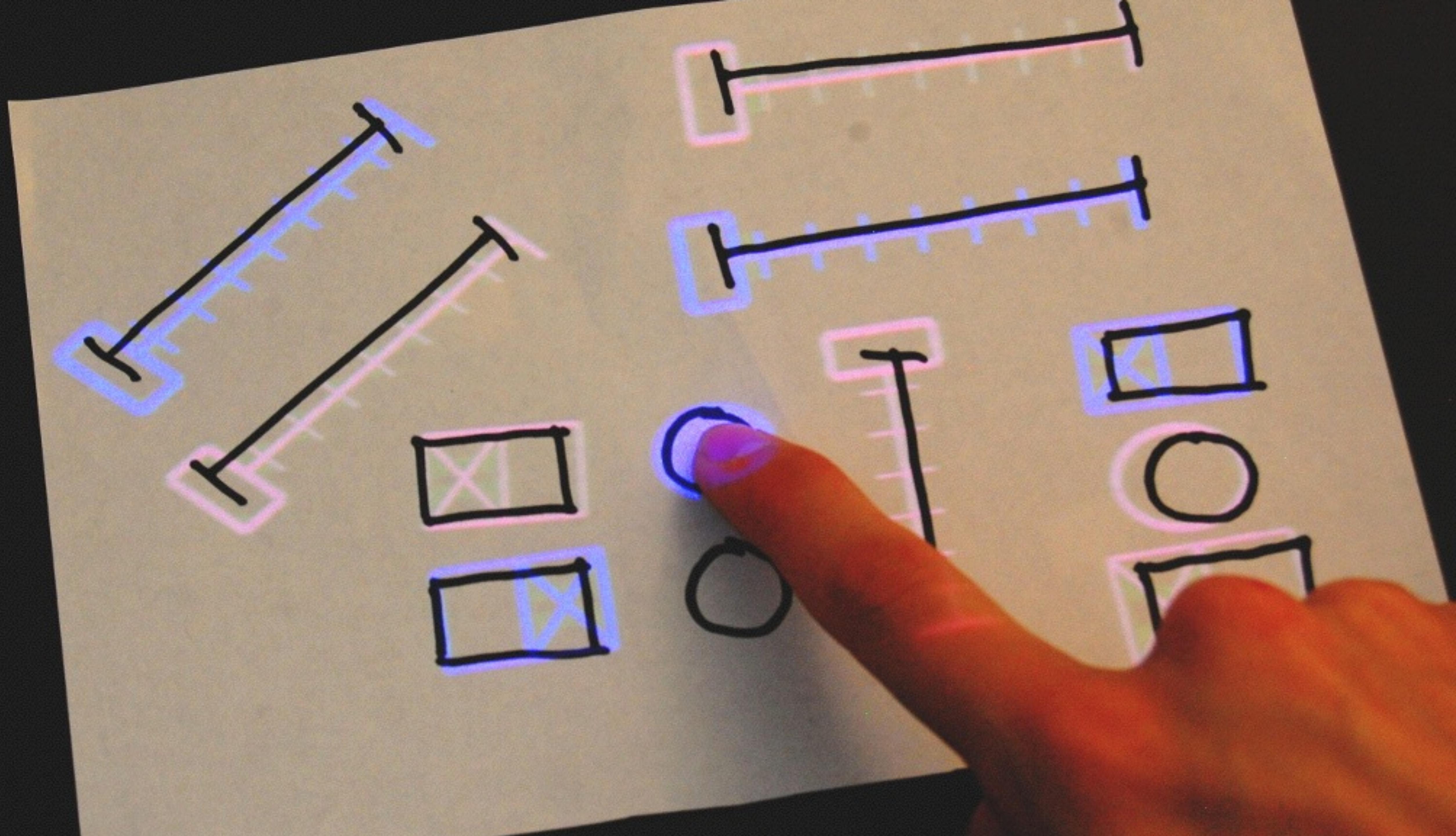
by Felix Faire



VIDEO

SKETCHSYNTH

SketchSynth: A Drawable OSC
Control Surface by Billy Keyes



VIDEO

DRAWN

by Zachary Lieberman



VIDEO

WORKSHOP

Bare Bones Computer Vision

WHAT ELSE IS IN THE BOX?

OPENCV

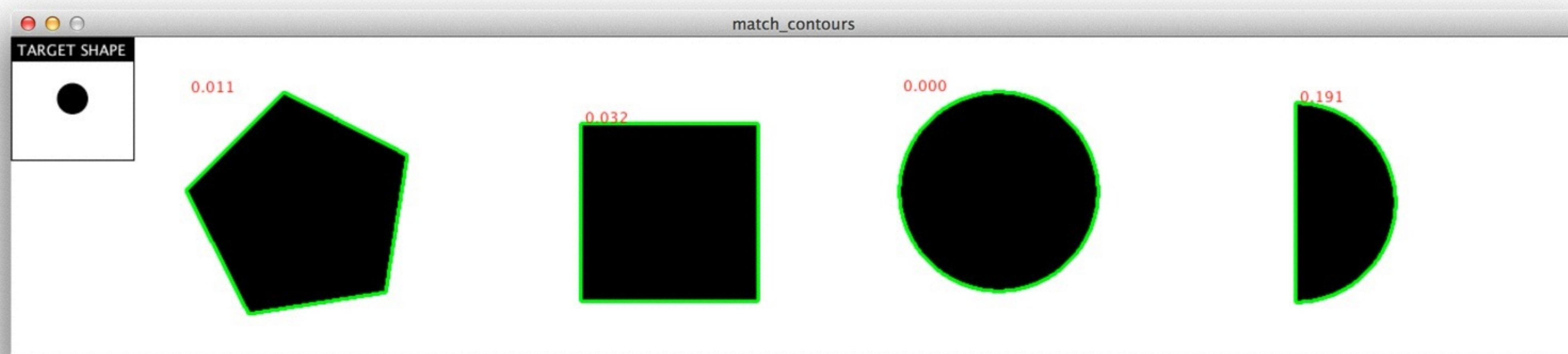
OPENCV

(Open Source Computer Vision Library)

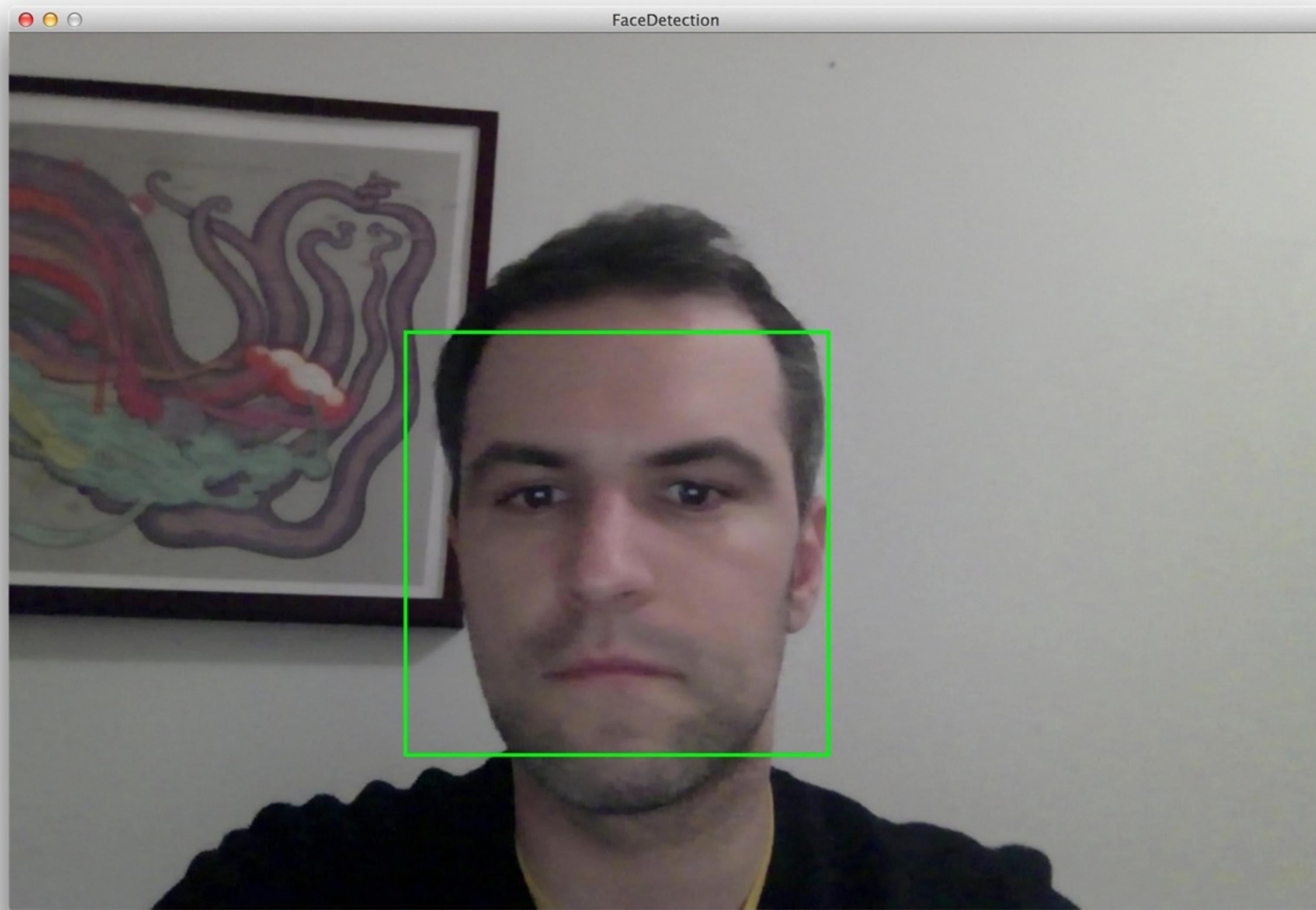
is an open source computer vision and machine learning software library. OpenCV was built to provide a common infrastructure for computer vision applications and to accelerate the use of machine perception in the commercial products.

OPENCV-PROCESSING

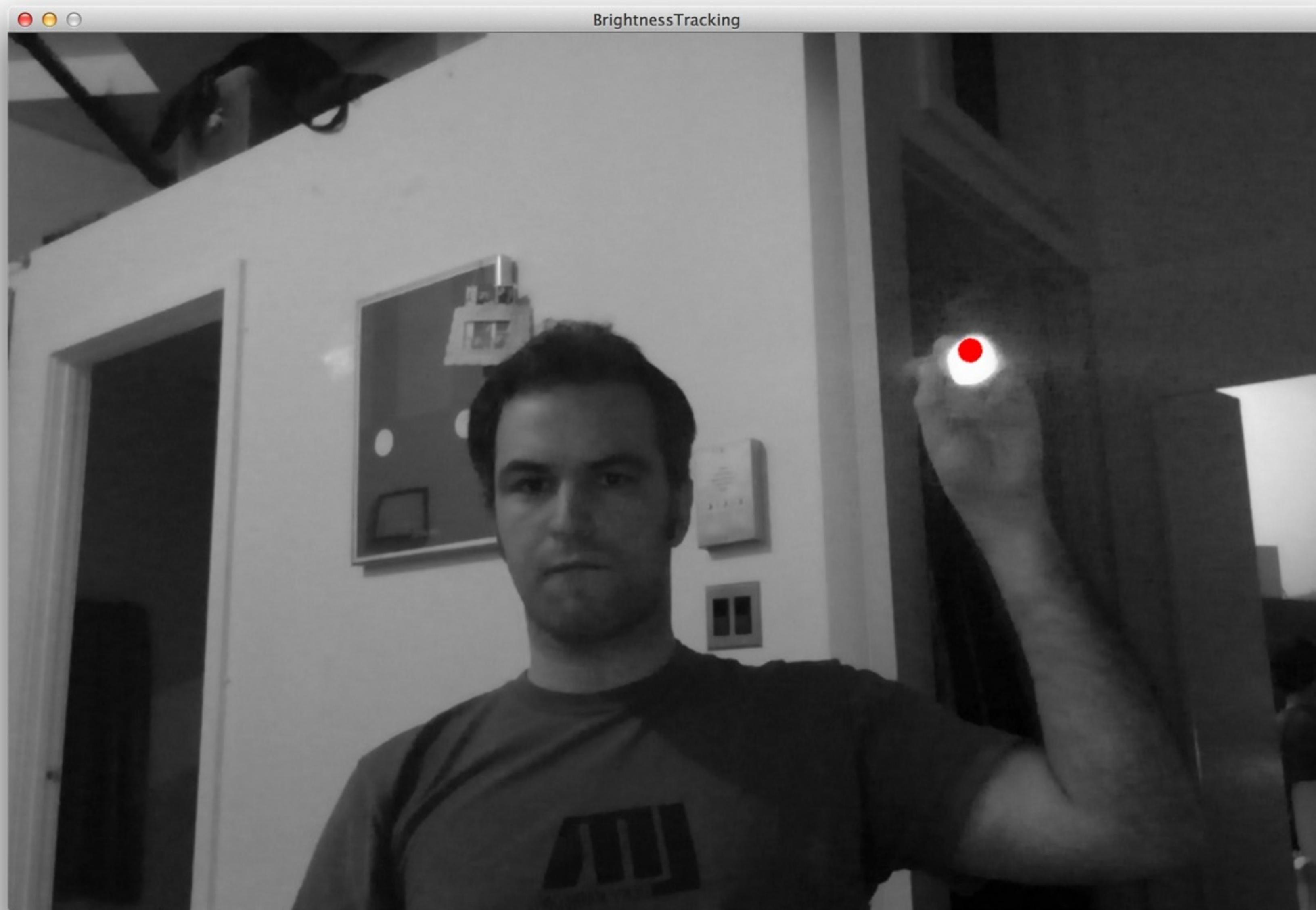
[https://github.com/atduskgreg/
opencv-processing](https://github.com/atduskgreg/opencv-processing) by Greg Borenstein

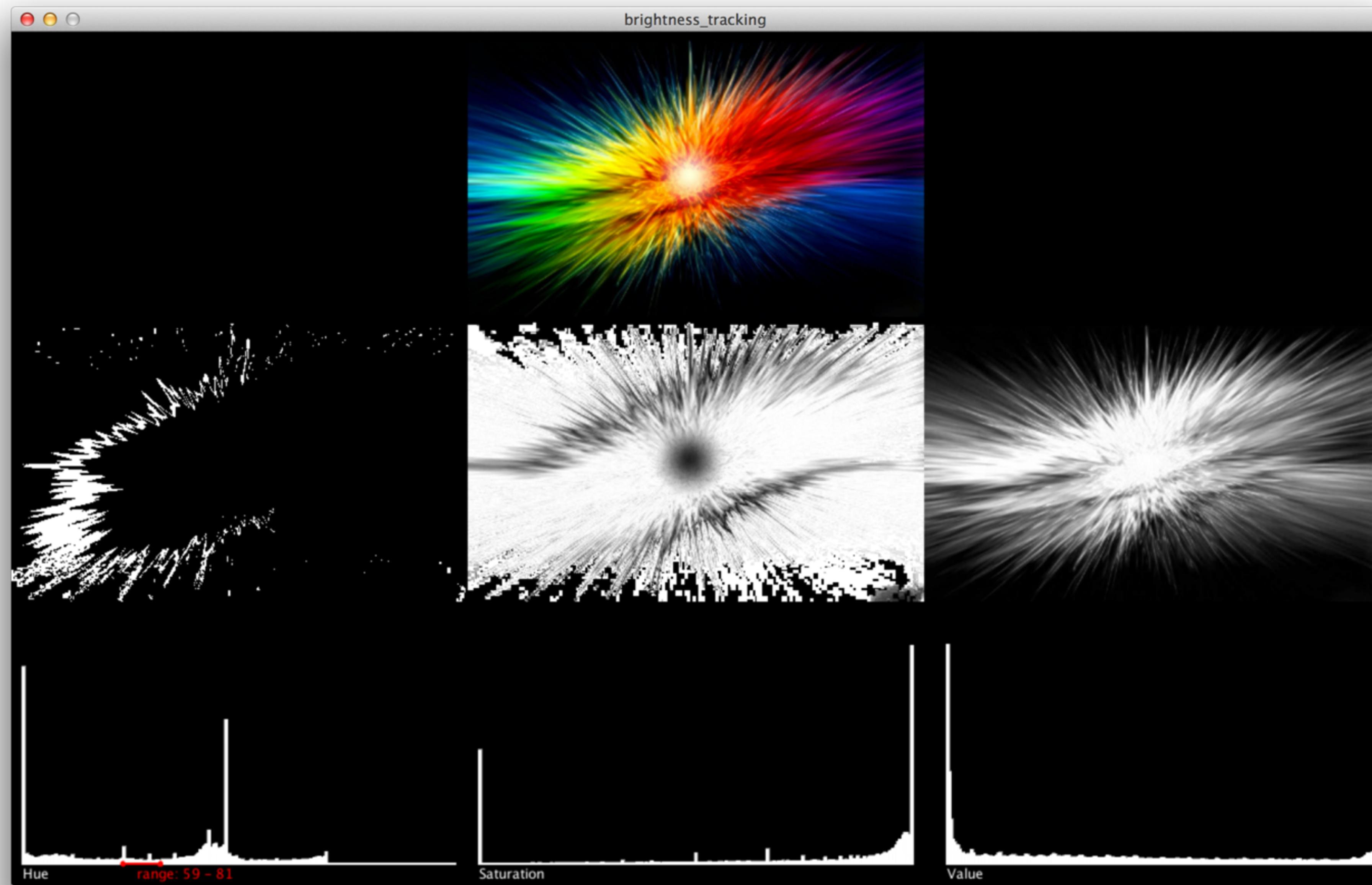


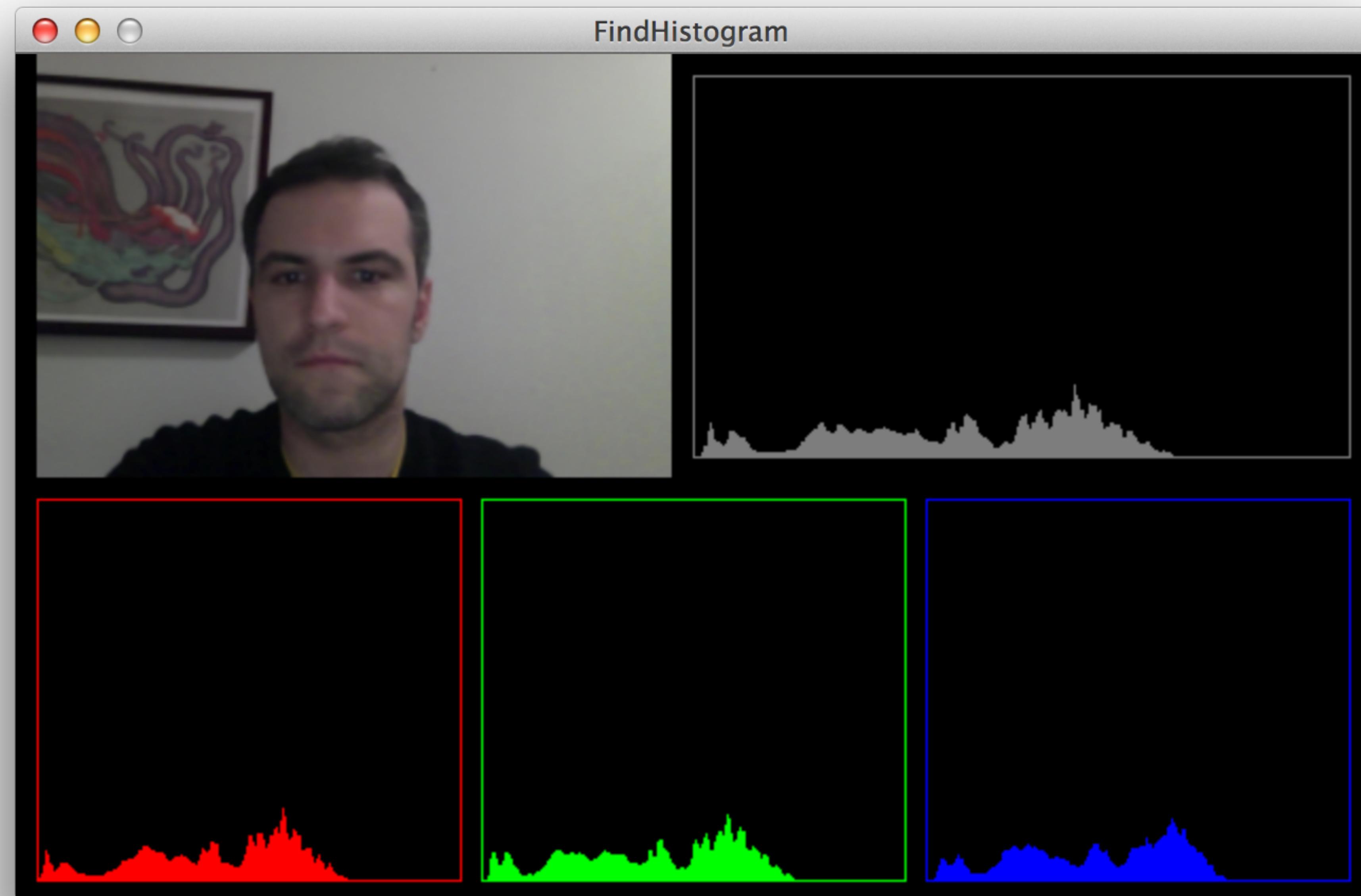






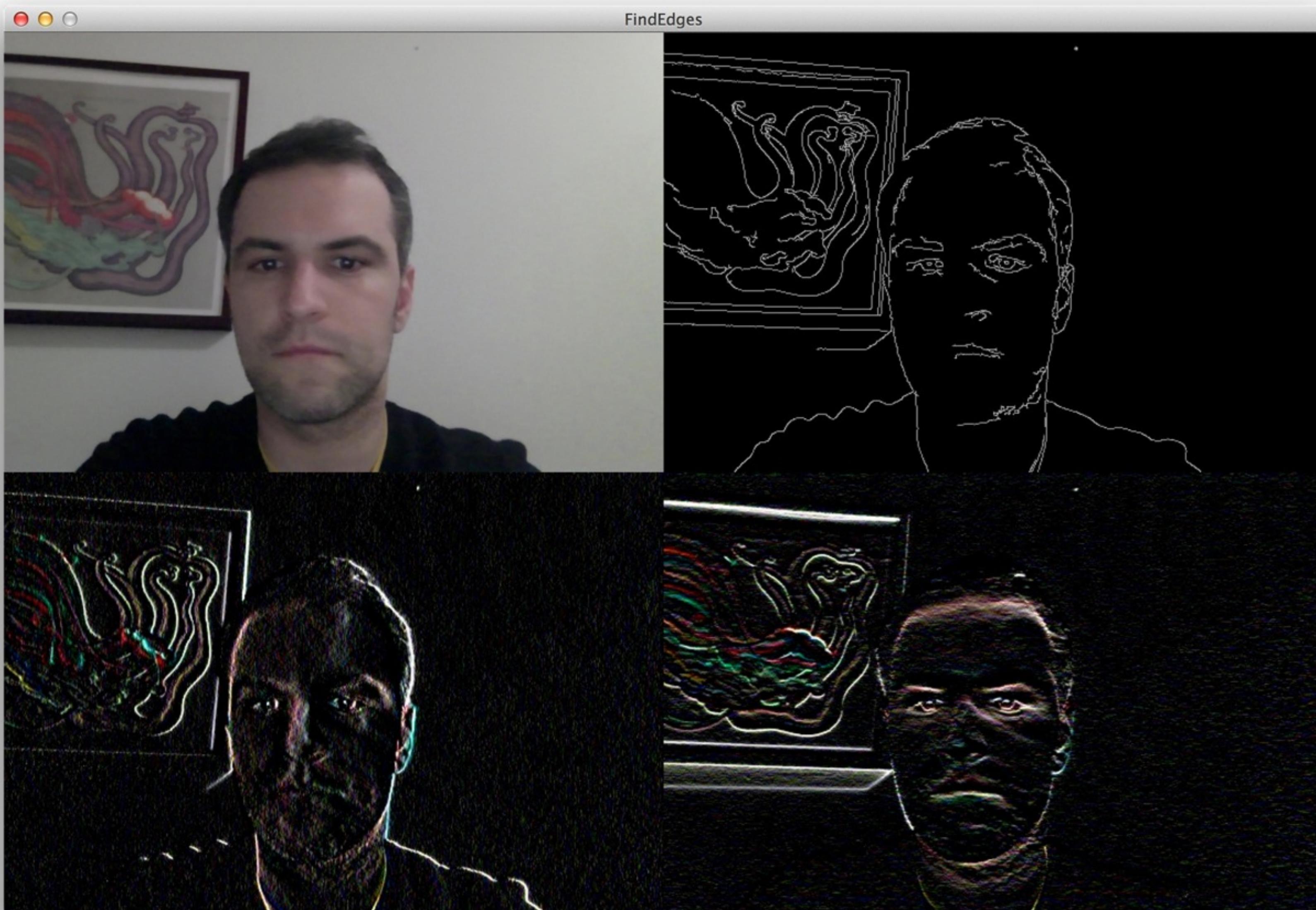




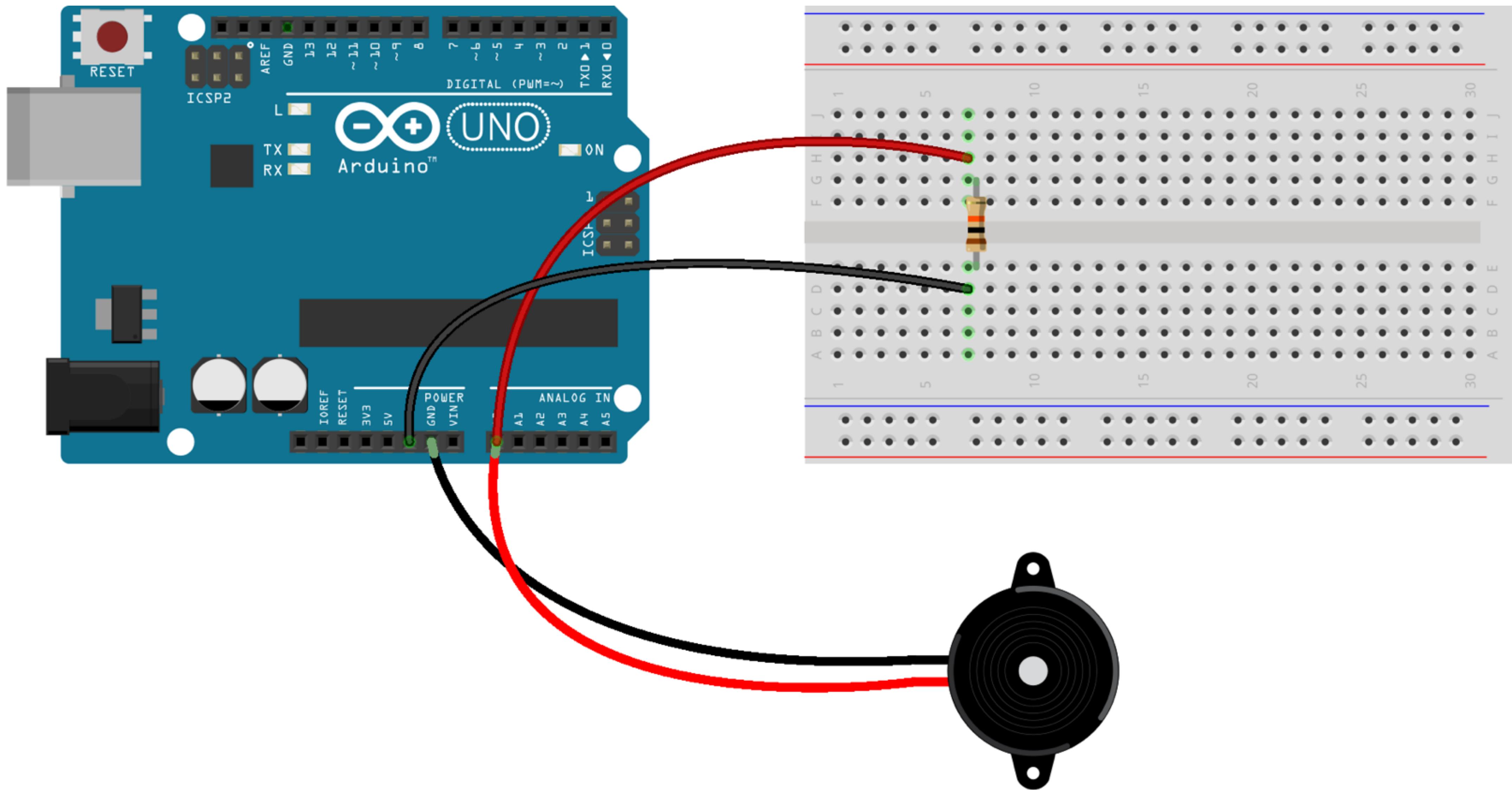


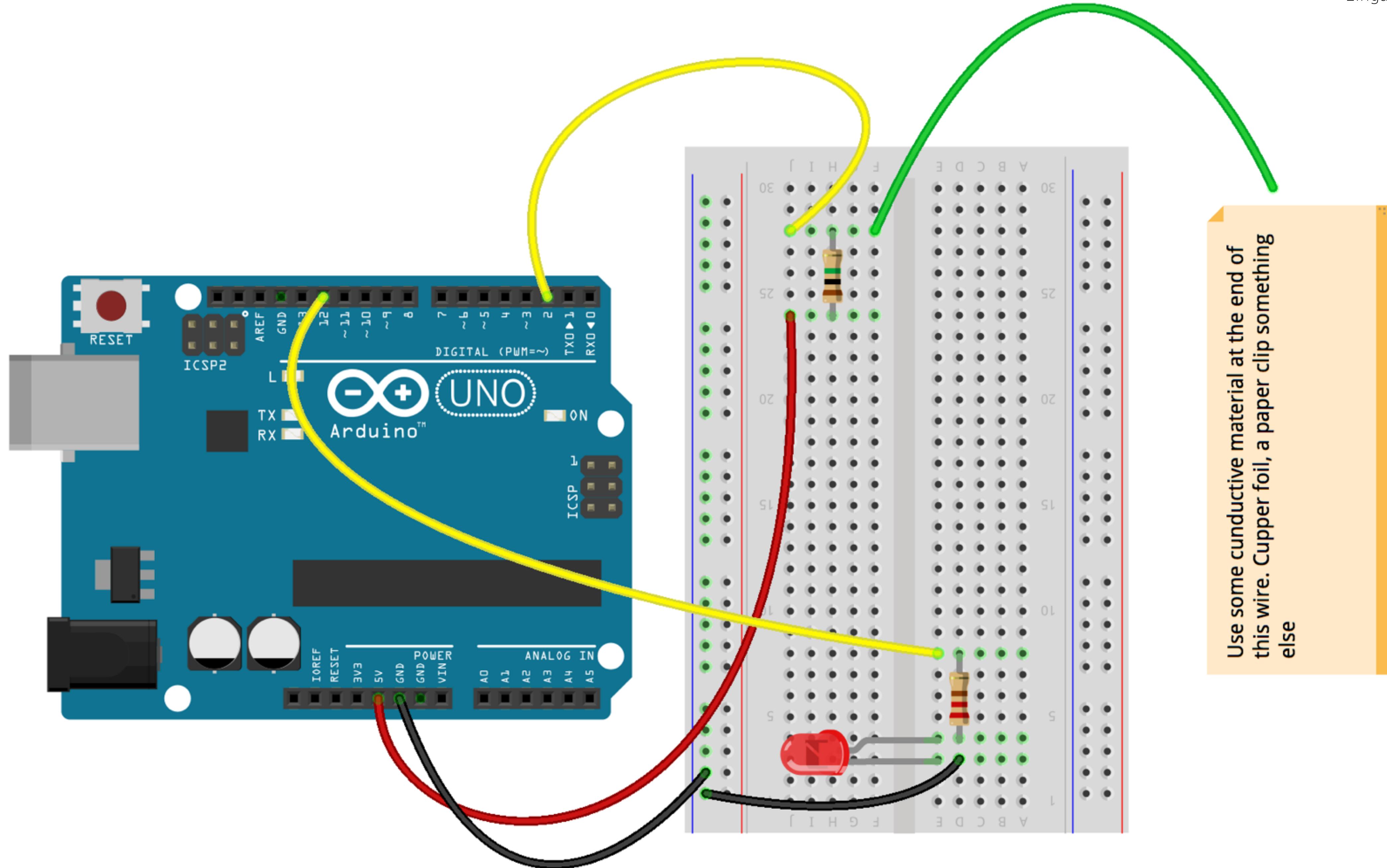


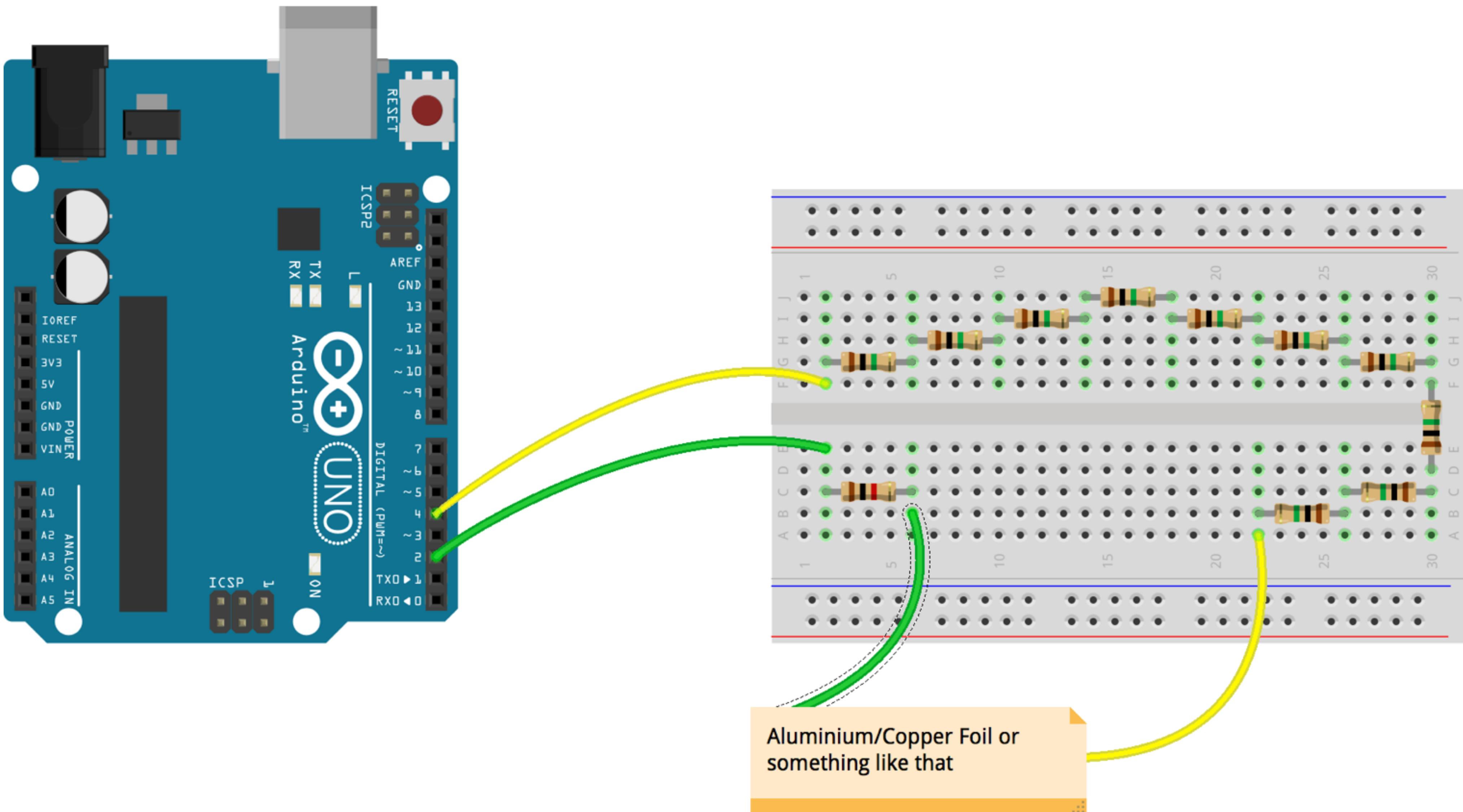




PHYSICAL COMPUTING









GROUPS OF 3

EXERCISE

Connect || Think || Present