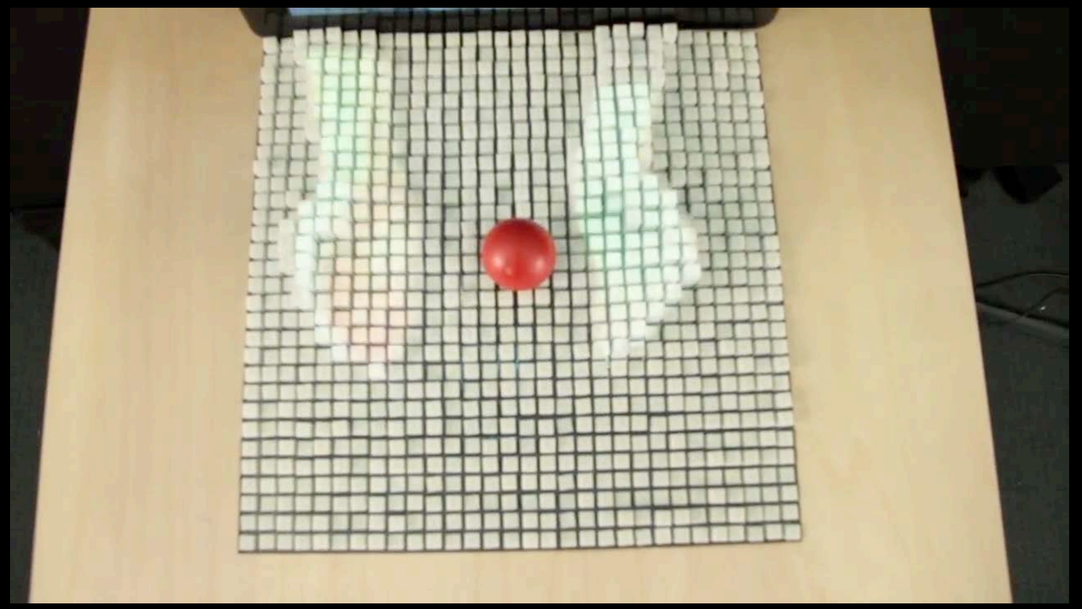
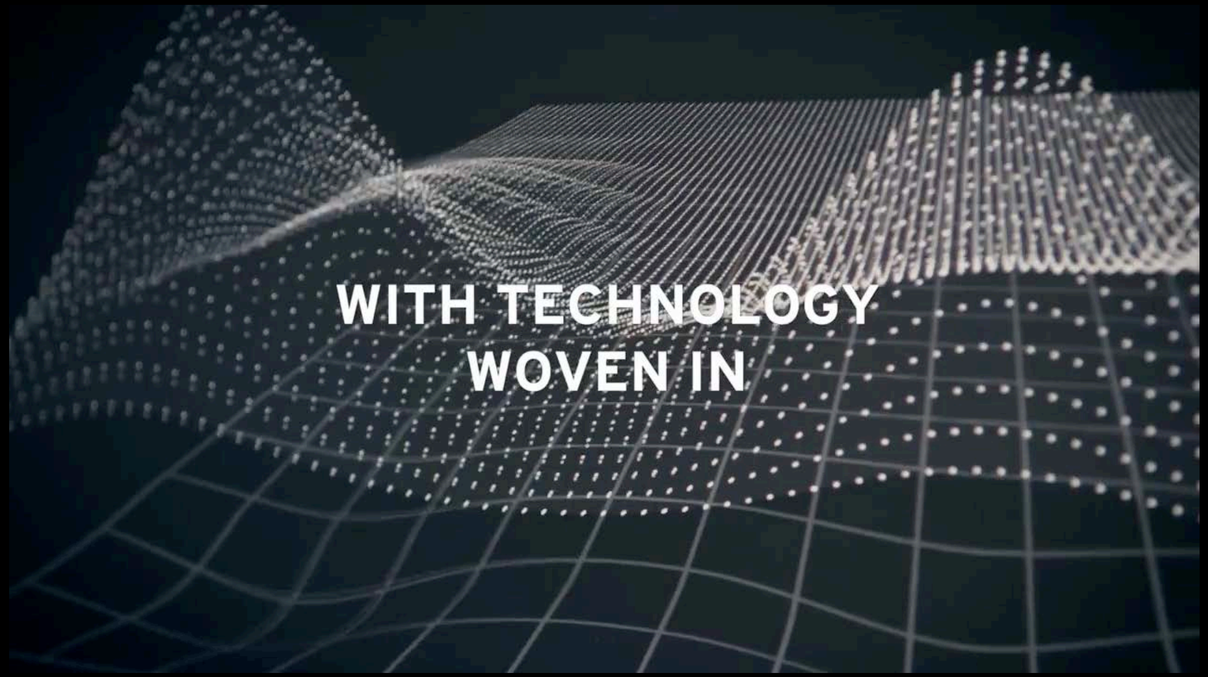
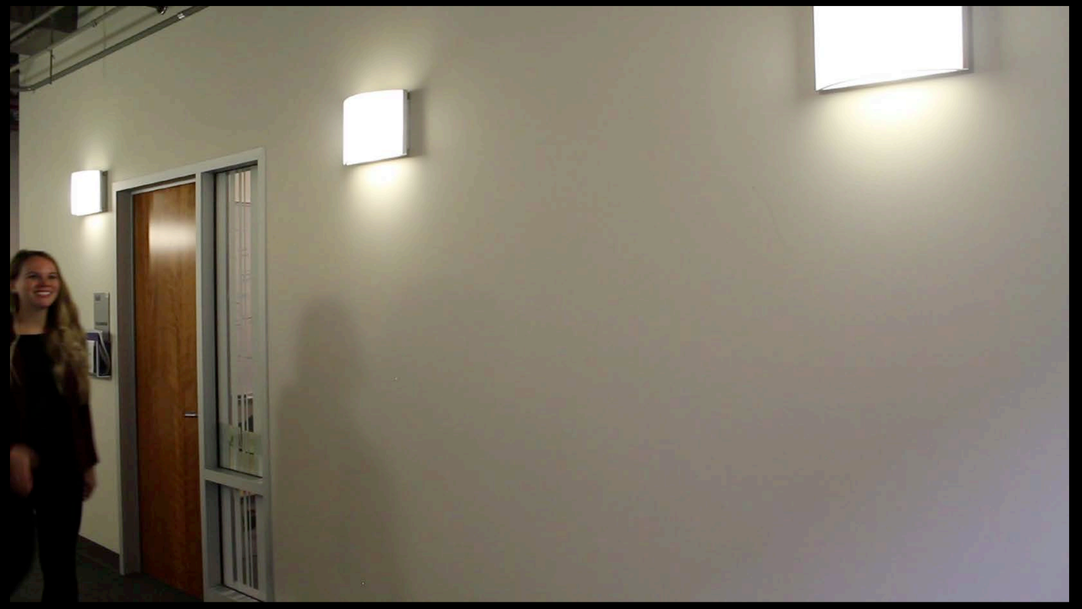
CS 160 USER INTERFACE DESIGN





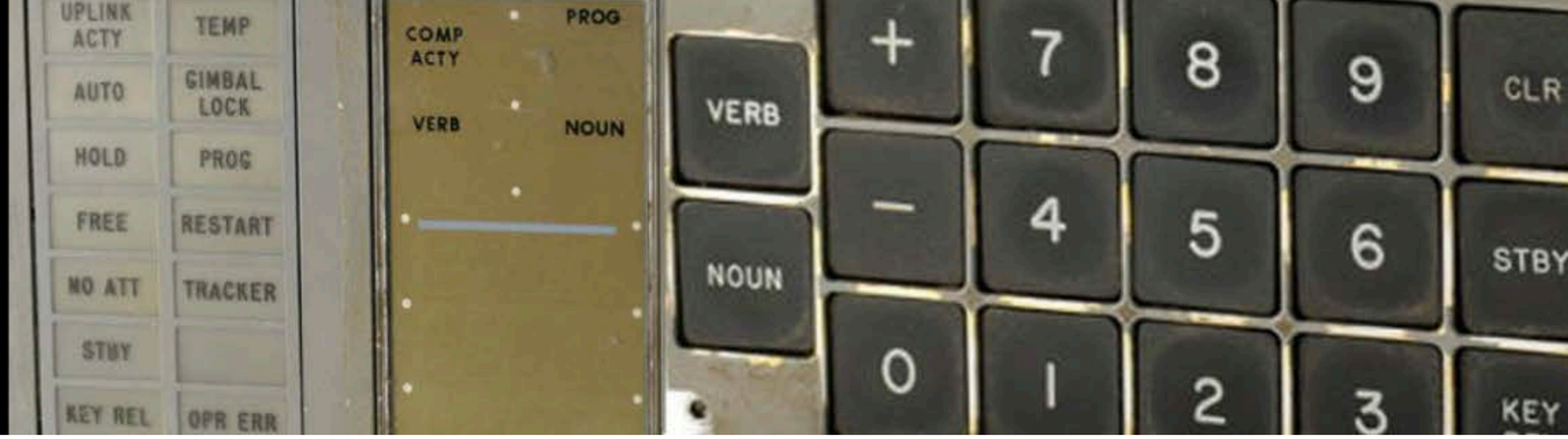


FALL **2020**

CS160

USER INTERFACE DESIGN

FALL 2020

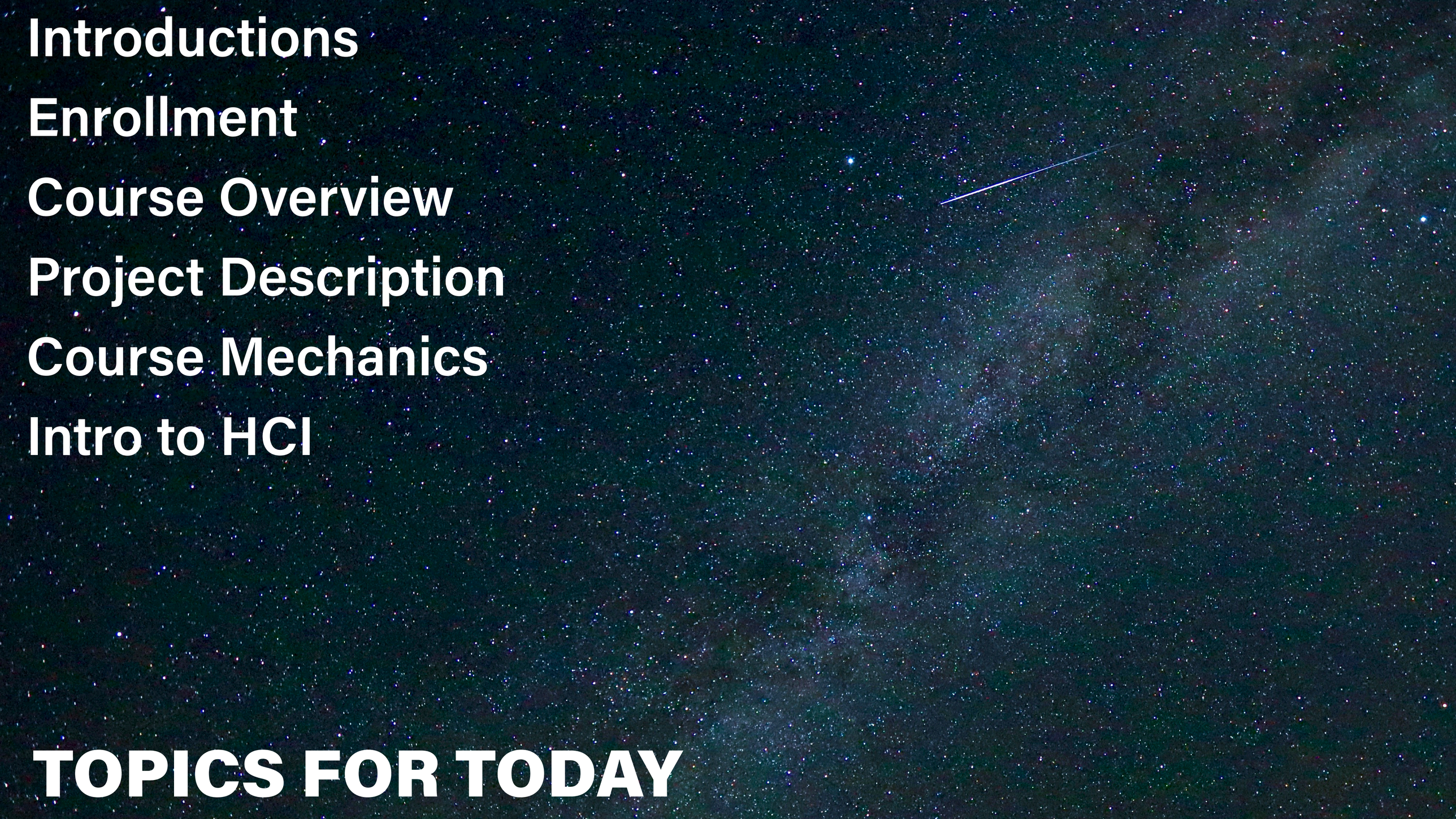


INTRODUCTION

26 AUG 2020

ERIC PAULOS
www.paulos.net

UNIVERSITY OF CALIFORNIA Berkeley



Introductions

Enrollment

Course Overview

Project Description

Course Mechanics

Intro to HCI

TOPICS FOR TODAY

ERIC PAULOS

apple
IIe

SHIFT
Z
X
C

Cal UNIVERSITY OF CALIFORNIA
BERKELEY

PAULOS ERIC J
10145772 Eric J.

Spring 90

F91

Eric Paulos
SIGNATURE

TRANSFERABLE - REPLACEMENT CHARGE

Cal UNIVERSITY OF CALIFORNIA BERKELEY

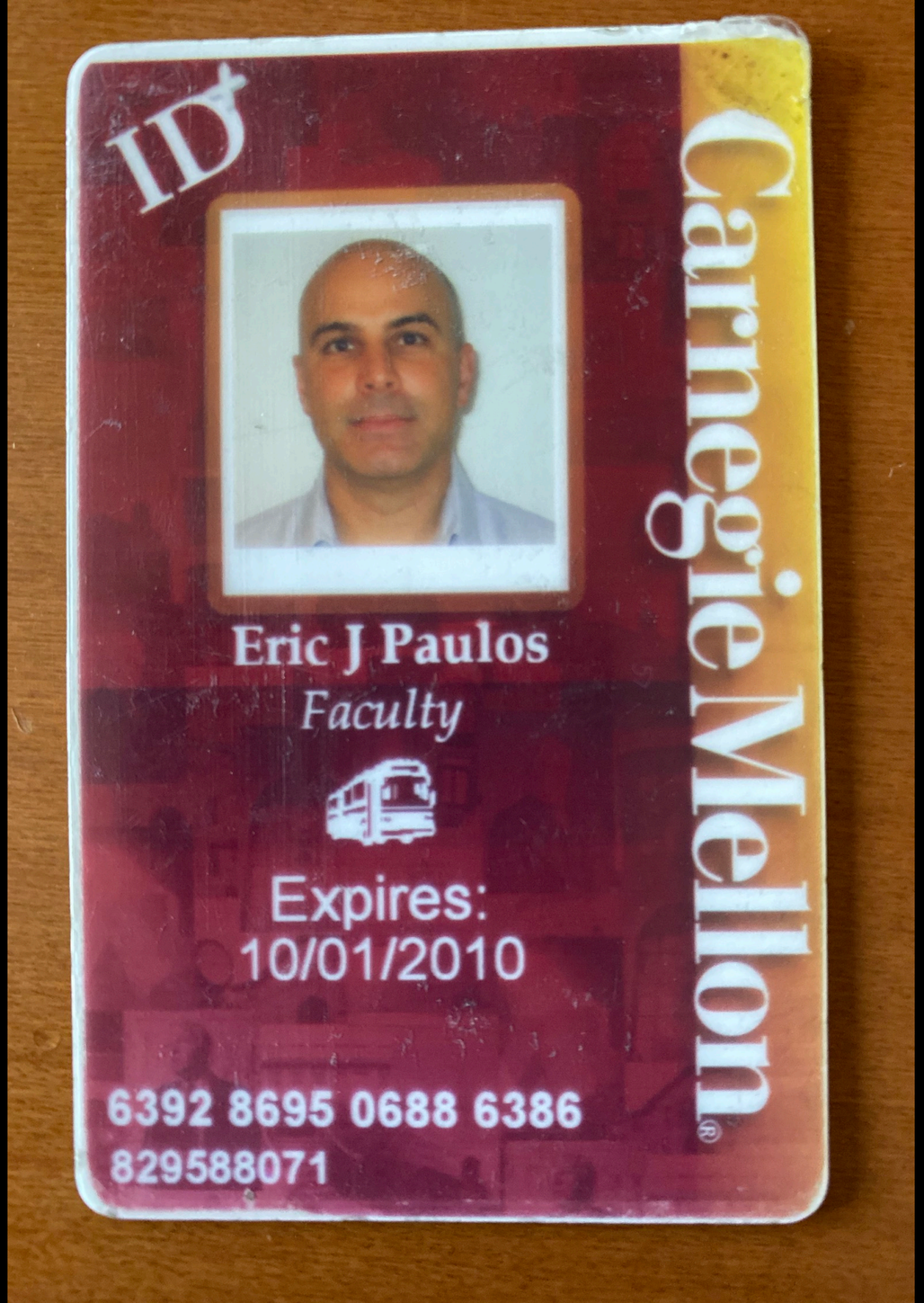
PAULOS ERIC J
10245772

NON TRANSFERABLE - REPLACEMENT CHARGE

VALI-DINE SYSTEM

intel Research

URBAN ATMOSPHERES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Carnegie Mellon
Eric J Paulos
Faculty
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6392 8695 0688 6386
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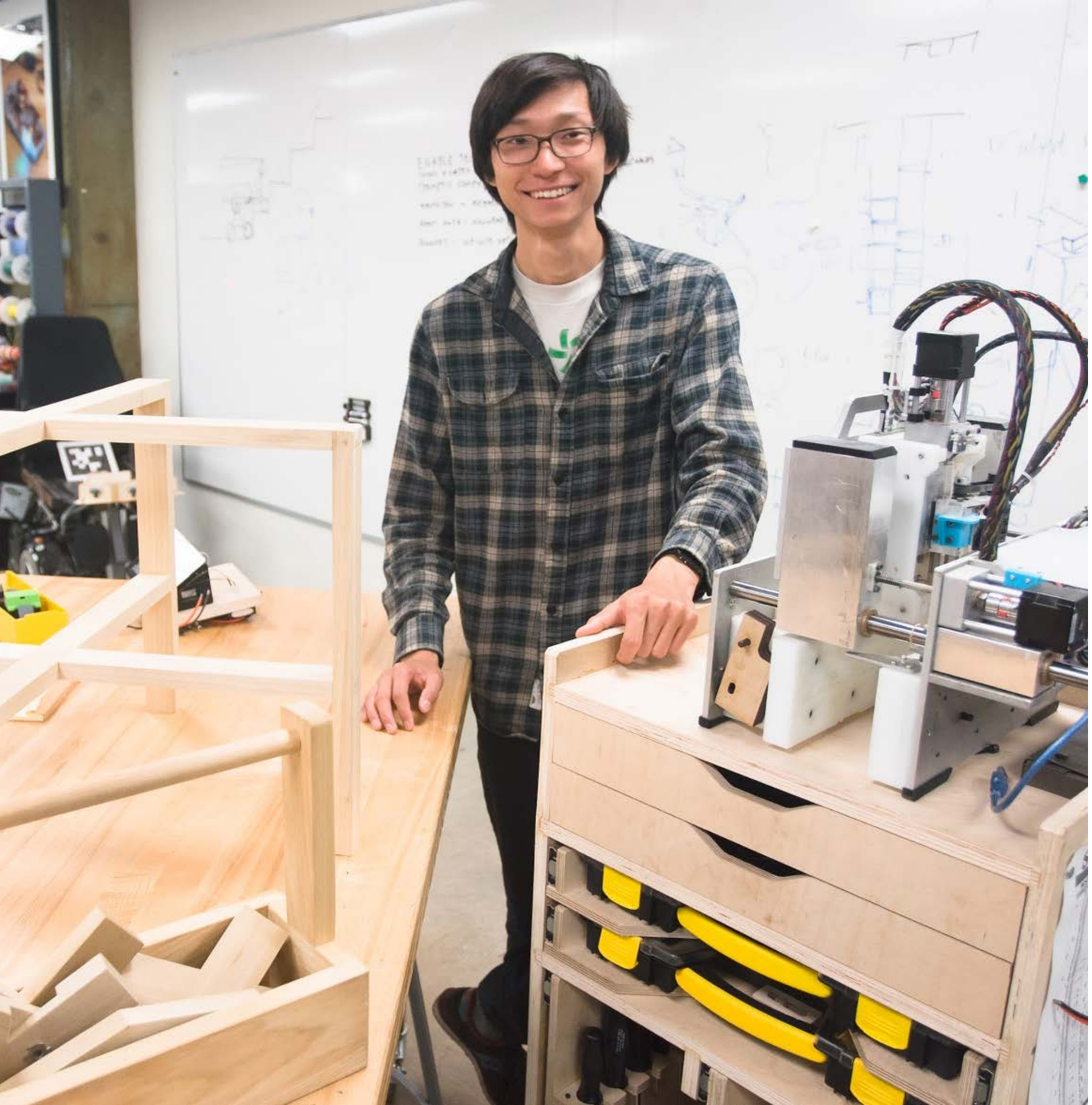
ERIC PAULOS

PROFESSOR



RUNDONG TIAN

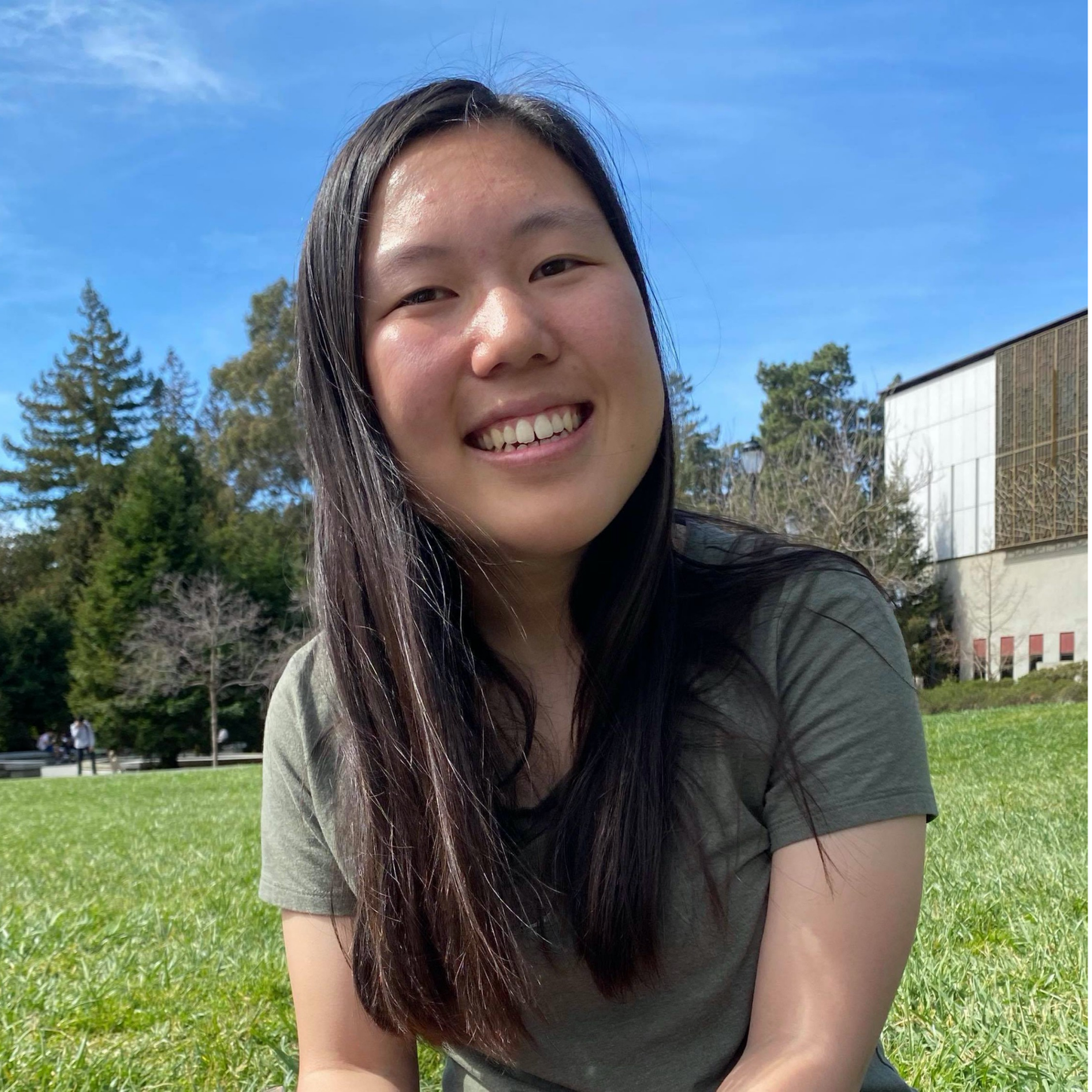
GSI

JANAKI VIVREKAR

GSI

SRISHTI GOSWAMY

GSI



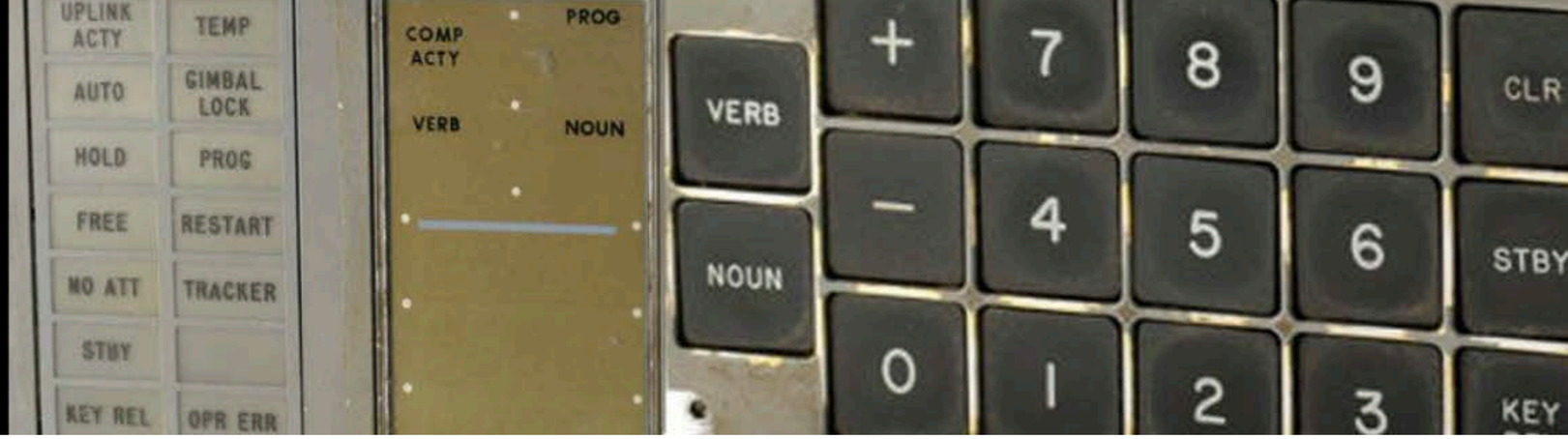
HEIDI DONG

Reader

CS160

USER INTERFACE DESIGN

FALL 2020



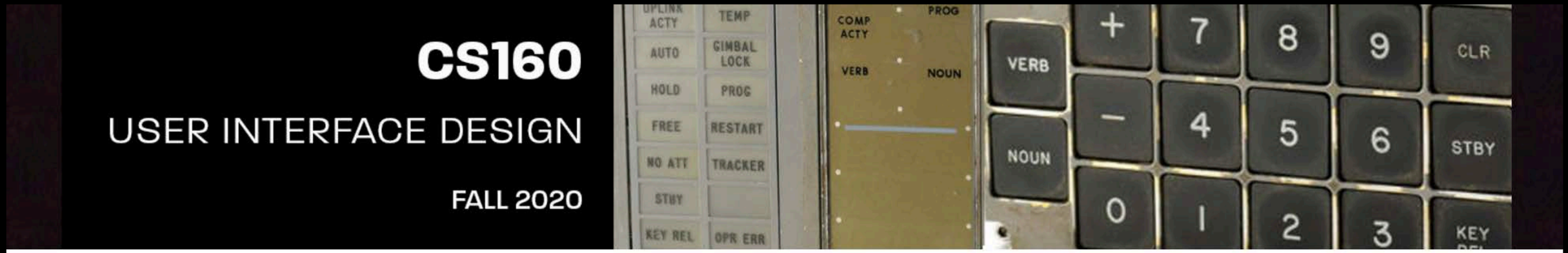
INTRODUCTION

26 AUG 2020

ERIC PAULOS
www.paulos.net

UNIVERSITY OF CALIFORNIA Berkeley

http://teaching.paulos.net/cs160_FL2020/



COVID-19

We are excited to be offering CS160 in Fall 2020. As you realize we are in unprecedented times and we ask that everyone be flexible and adaptive as we finalize plans for the Fall 2020 offering of CS160. The most up to date info concerning enrollment, technology, attendance, etc can be found on our FAQ. Please check there as many answers can be found.

Course Description

CS160 is an introduction to Human Computer Interaction (HCI). You will learn to prototype, evaluate, and design a user interface. You will be expected to work within a gteam of students in this project-based course.

CS160

Lectures:	Mon+Wed 10:30AM – 12:00PM
Instructor:	Professor Eric Paulos
Online discussions:	Piazza
Contacting GSIs:	via bCourses
Public Showcase:	Wed 9 Dec during RRR week (see syllabus)
Final Presentations:	Tue 8 Dec during RRR week (see syllabus)
Final Materials	Due Friday 11 Dec at 11:59PM

I CAN'T ENROLL BUT I SEE SPACE IN THE CLASS?

I do not control enrollment. It is handled through CS and does give preference to EECS and L&S CS students. We hope to accommodate as many as we can. Please put yourself on the waitlist. We cannot enroll you if you are not on the waitlist. Ignore messages through enrollment that say there are open spaces in the class – these are enrollment artifacts. We are aware of the current and expected enrollment and handling them to accommodate as many students as we can. Final enrollment will be decided by **Monday 31st August, 2020**.

I HAVE A FINALS CONFLICT WITH CS160 AND ANOTHER CLASS?

No worries, CS160 does not have final. We do have a final critique and public showcase during RRR week that you must attend (exact date can be found on the syllabus).

WILL THE CLASS BE WEBCAST?

Yes, it is scheduled to be webcast. But you are of course strongly encouraged to attend class with us online.

I HAVE A GREAT PROJECT IDEA I WANT TO WORK ON, CAN I DEVELOP IT THROUGHOUT THE COURSE?

We will all work from a single design brief for the final project. The brief will provide enough creative range for everyone but you will need to keep your final design within the final scope of work. Best to jump into the class ready to generate new ideas than to bring one you have already developed or have thought about.

WHEN ARE THE SECTIONS AND HOW DO I ENROLL?

Sections are on Thursday and Fridays. They provided much needed technical materials to complete the assignments and build your HCI skills. Select one of the sections we have listed. Fill out link on piazza regarding sections times (Th/Fri) moving forward starting in week 2. You must be able to attend at least one section time.

For this week (see Piazza and bCourses for info on how to join section):

Thur 11-12

Fri 1-2

Fri 2-3

IS THERE A MIDTERM?

No!

You’re welcome.

But there will be higher expectations and load place on other portions of the course material.

CAN I FORM MY OWN TEAM?

Please realize that I know there are many functional groups and friendships within our UC Berkeley community. I have tried nearly every mechanism for forming groups and by far the best is for the teaching staff to select the groups. Groups will be formed and finalized by the teaching staff and professor.

WHAT HAPPENS IN THIS CLASS?

For many of you, this will be one of the first times we focus on the user experience within computer science. You will blend your technical and computational lens with a humanist view of people, motivations, needs, desires, emotions, and demographics. You will strengthen your design skills and develop inspiring portfolios of work. If you put in the time and effort, this class will change you ... and you'll likely have some fun along the way.

GREAT, THE CLASS IS WEBCAST.
I'M DEFINITELY NOT GOING TO CLASS.

I know most of you are not thinking that but indeed I'm not naïve enough to not realize that by webcasting lectures that some of you interpret that as an open invitation to not attend. Your experience at Berkeley is precious. It is such an amazing moment in your life. I know you may not realize that now but trust me it is (ask your friends that have graduated and our out a few years)! For you to simply opt-out of many of the important experiences is not only disheartening (for me and you) but also robs of you of the essential, once in a lifetime experience of being a student. Don't take my word for it? Here are public, unsolicited comments about my offering of CS160.

“It is the single most amazing class I’ve taken at Berkeley”

“I owe my current career plans to CS160; this was the class that got me very interested in the area of mobile development.”

“Overall I highly recommend taking CS160 if you’re remotely interested in UI/UX, design, being a program manager, starting your own company, or just a software engineer who wants to build a better user experience. The skills in understanding users, and sketching out ideas have helped me in my career.”

So attend class, be engaged, change your perspective, and be rewarded. I'm here to help you along that path. Please be there with me!

IMPORTANT!!!

Roughly first half of semester will be lectures

Second half of semester will be studio time in teams

There will be a final critique during RRR week — see syllabus

There is no final

IF THIS IS NOT THE CLASS FOR YOU…

PLEASE DROP IMMEDIATELY!

…GIVE OTHERS A FAIR CHANCE TO GET IN

THIS COURSE

Is about reliably building well designed **interactive systems**

The goal is not to build a working system but an **interactive prototype**

We place emphasis on **fieldwork**, rapid **prototyping** and user **testing** to find the right design and avoid obvious and not-so-obvious mistakes

CLASS CULTURE EXPECTATIONS

UC Berkeley Honor Code

https://teaching.berkeley.edu/berkeley-honor-code

Campus Principles of Community

https://diversity.berkeley.edu/principles-community

University Standards for Academic Integrity

https://sa.berkeley.edu/conduct/students/standards

CLASS CULTURE

"As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others."

INCLUSIVE CLASSROOM

If you make a mistake, correct yourself

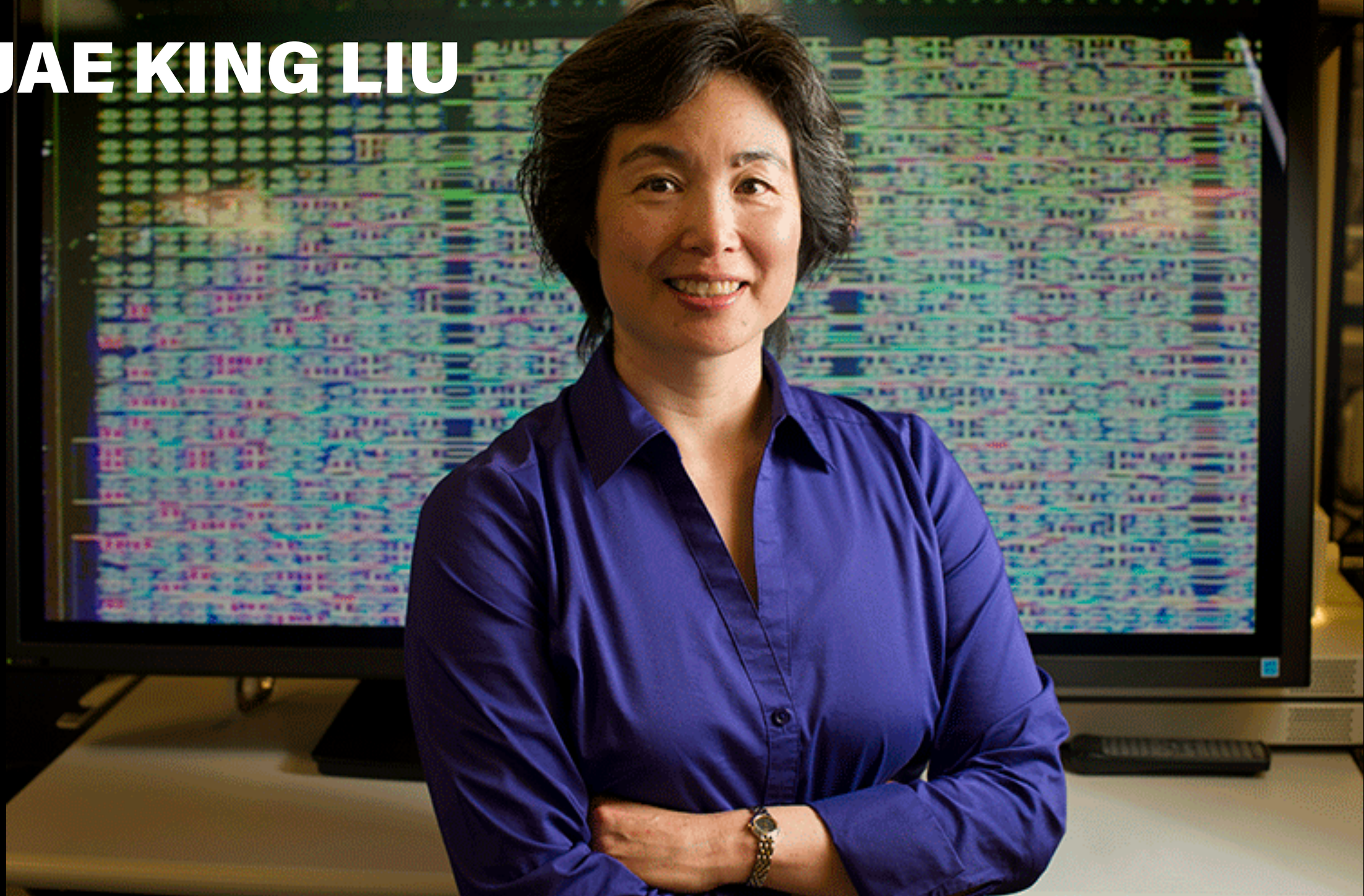
If someone else makes a mistake, correct them

If I make a mistake please correct me

Going on as if it did not happen is actually less respectful than making the correction

INCLUSIVE CLASSROOM?

TSU-JAE KING LIU



OSCAR DUBÓN

CLASS PROJECT OVERVIEW

THIS COURSE

This semester we focus on **mobile** applications

Android Studio

ASSIGNMENT TYPES

PROG: Programing assignments to help you get up to speed on working with Android

DESIGN: Design assignments to allow you to explore the HCI material in practice unrelated to a specific hardware platform

FEED: Feedback about groups and teamwork

PROJECT: The main team based assignment

ASSIGNMENT TYPES

RR: Reading Responses are text (and perhaps visual) responses to selected readings. Individual responses due before class.

VR: Video Responses are small group responses to selected videos. Video responses are shared and groups change frequently throughout the term.

TEAMS

- Groups will form in Week 5
- 4–5 students to a team
- You'll work with students with different skills/interests
- Apply several HCI methods to a single interface
- Do not wait to drop!

REQUIREMENTS

- CS160 is an upper division course
- You will work extensively on one significant programming project
- To participate fully in this course, you are required to have taken CS61B or equivalent
- We assume that you are familiar with Java, object oriented programming, are comfortable coding a large-scale project, working with an IDE, and APIs
- You must be able to attend one of the sections
- You must commit to working with your assigned team on your group project
- You not are required to own an Android phone. All assignments can be completed in the emulator.
- Check withe the GSIs and on Piazza if you are unsure

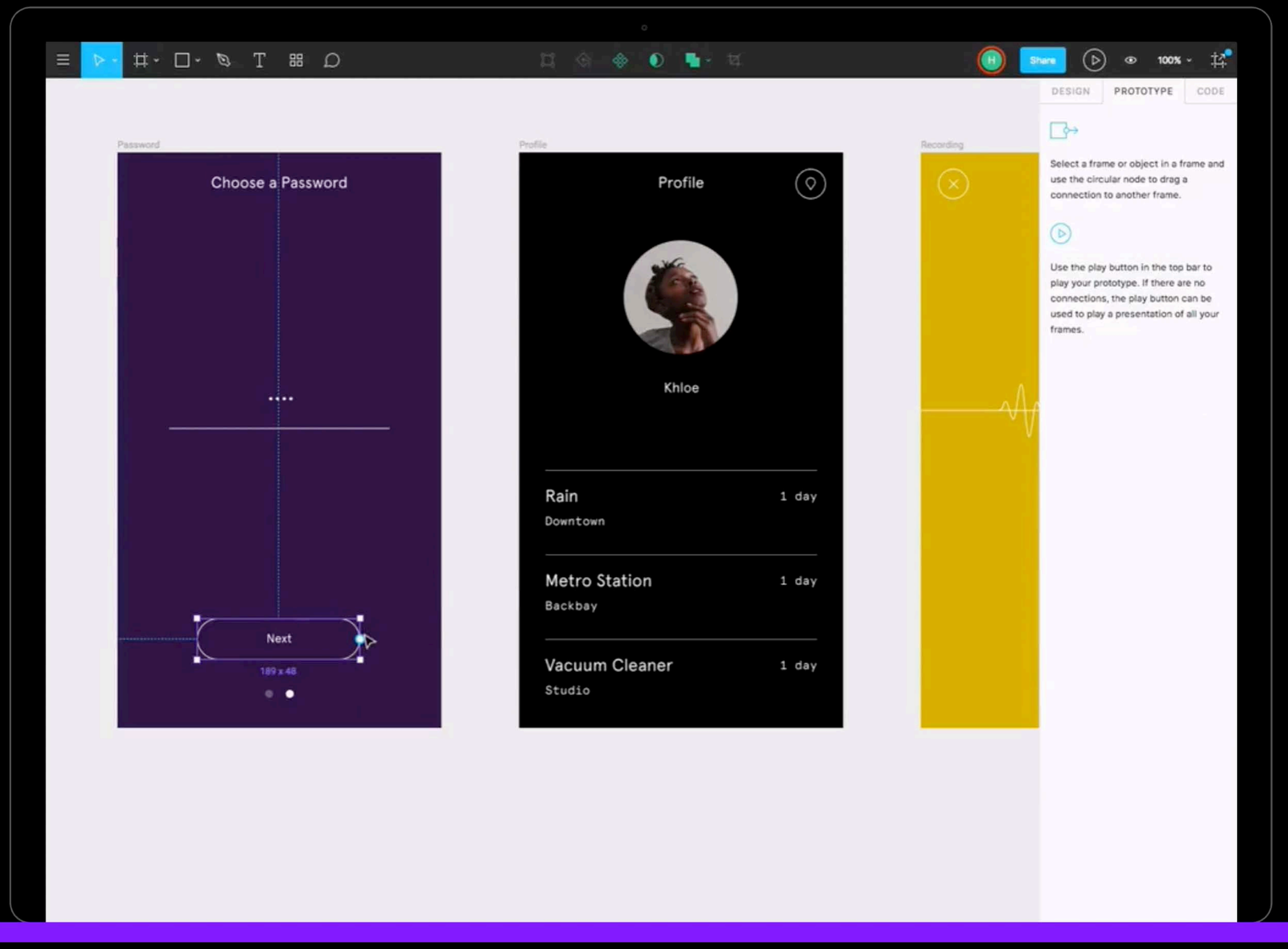
COMPUTER REQUIREMENTS

Full Adobe Creative Suite

Sufficient memory and disk space to run Adobe Suite, Android Studio and emulators

Printer access for paper prototypes (optional)

FIGMA


Share
100%
DESIGN
PROTOTYPE
CODE
Password
Choose a Password
Next
189 x 48
Profile
Profile
Khloe
Rain
1 day
Downtown
Metro Station
1 day
Backbay
Vacuum Cleaner
1 day
Studio
Recording
Select a frame or object in a frame and use the circular node to drag a connection to another frame.
Use the play button in the top bar to play your prototype. If there are no connections, the play button can be used to play a presentation of all your frames.

GOALS OF THE COURSE

Learn to design, prototype, evaluate interfaces

Discover tasks of prospective users

Cognitive/perceptual constraints that effect design

Techniques for evaluating an interface design

Importance of iterative design for usability

Technology used to prototype & implement UI code

How to work together on a team project

Ability to give and receive feedback as part of design iteration

Communicate your results to a group

Many of these will be key aspects of your future jobs

CS160 HAS A HEAVY WORKLOAD

COURSE MECHANICS

COVID-19 Challenges

Office Hours

Sections

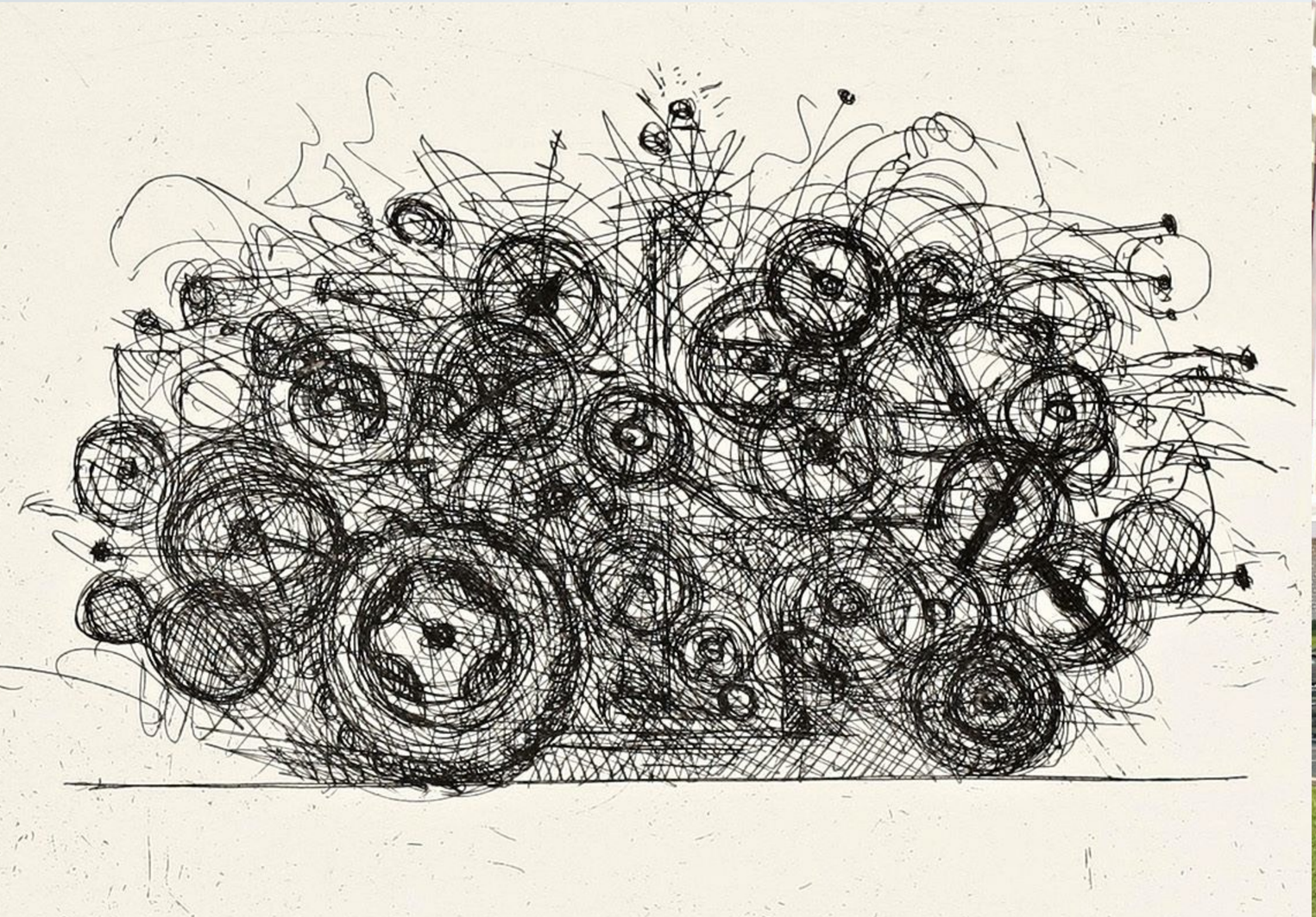
Course Website

bCourses

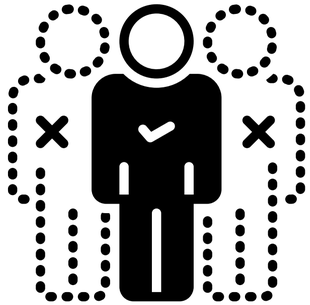
Assignments

COVID-19 CHALLENGES

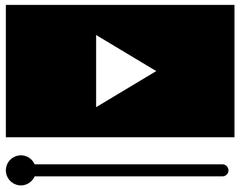
PLASTIC DYNAMISM



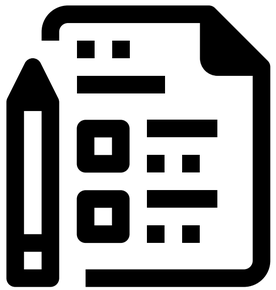
COVID-19 “PLASTIC”



Relaxed attendance policy



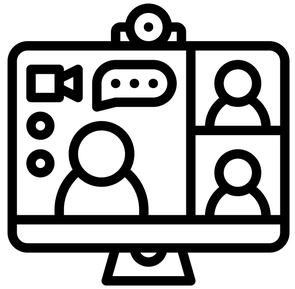
Lectures Recorded



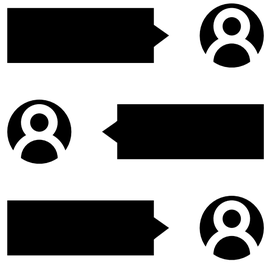
No Midterm

COVID-19 “PLASTIC”

Unmute your video



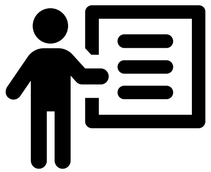
Please be fully clothed, not in bed or in the bathroom, and not operating a vehicle while visible in Zoom



Use the Chat function as a “backchannel” to post questions, comments, links and ideas

CLASS FORMAT

No zoom class lectures longer than 45 minutes

10:30 – 10:40		CHAT	Open topics chat (10 min)
10:40 – 11:25		LECT	Lecture (45 min)
11:25 – 11:35		REACT	Design Challenge (Breakout Groups) (10 min)
11:35 – 12:00		LECT+	Additional Lecture as needed (25 min)

OFFICE HOURS ▪ SECTIONS

Office Hours

See our course webpage:
http://teaching.paulos.net/cs160_FL2020/

Sections

Section starts **THIS WEEK — THUR + FRIDAY**

Read Piazza info before section

ASSIGNMENTS ARE ON THE SCHEDULE & BCOURSES

Syllabus

WEEK 1

26 Aug **Introduction**

Slides
Assignment: Reading Response (due before class on 31 Aug)

Section: Design and HCI

WEEK 2

31 Aug **The Design Cycle, Brainstorming, and Critique**

Slides
A Hundred Racist Designs by Pierce Gordon, Ph.D (part 1) and (part 2)
Reading: Rogers, Y., Sharp, H., & Preece, J. (2011). Interaction Design: Beyond Human-Computer Interaction (3rd ed. ed.), pp 9-18.
Assignment: PROG 01: Electric Time (due by 11:59pm on 18 Sep)
Assignment: DESIGN 01: (due 11:59pm 4 Sep)

READINGS RESPONSE

Readings are very important to the class

Make sure you do the reading before class

Readings will be posted on bCourses and Website

Online reading discussions (ongoing assignment)

You must respond to the reading prompt **before** class. We will not accept late comments. Comments are a **major factor in your class participation grade**

Will be graded based on the overall quality of the response

3 = excellent

2 = good

1 = partial

0 = very poor or missing response

REACHING US

Questions about course material, assignments

Piazza

Grades and Assignments

bCourses

Private questions

If other students will benefit from an answer, ask publicly on Piazza

If it's personal, use Piazza private messaging feature

Do not email us directly

ASSESSMENT

The goal of CS160 is to teach you to **design** and **evaluate** interfaces

Specific grading rubric guidelines will be given in each assignment

Good communication expected in your oral and written presentations

Groups self-assess participation
...you will help evaluate your team mates and vice versa

Much of CS160 is **qualitative** — there is not an exact correct answer but a landscape of well researched, executed, and designed solutions of varying excellence

GRADING

15% Class Participation
(Teamwork, Feedback, Zoom Class, bCourses, Piazza)

15% Responses (Reading and Video Responses)

30% Individual Programming & Design Assignments

40% Project Assignments

POLICIES

Late Assignments

Most assignments will be due before class on the due date

Group assignments will not be accepted late

Individual programming and design assignments can use up to three 24 hour slip days:

1 min — 24 hours: one slip day (weekends count)

Slip Days are days and cannot be broken down into smaller units

You have exactly **three slip days this semester**

Cannot be used on group assignments or reading responses

Cheating (official)

Will get you an F in the course

More than once can get you dismissed from Cal

BREATHE

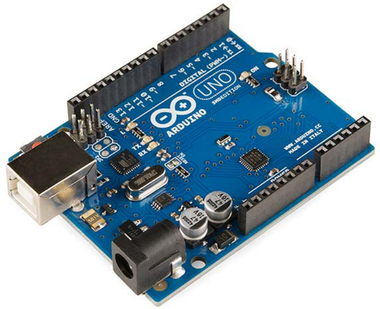
HCI OVERVIEW

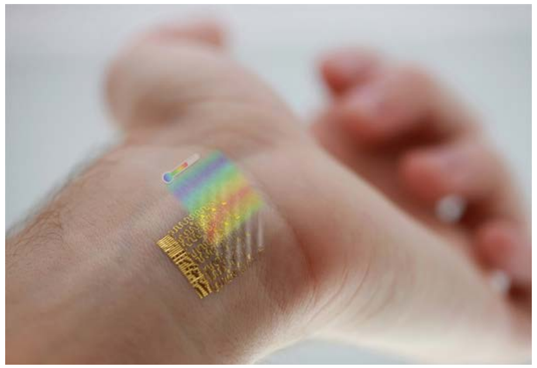
HCI ▪ UI ▪ Usability ▪ Iterative Design

HUMAN

COMPUTER

INTERACTION





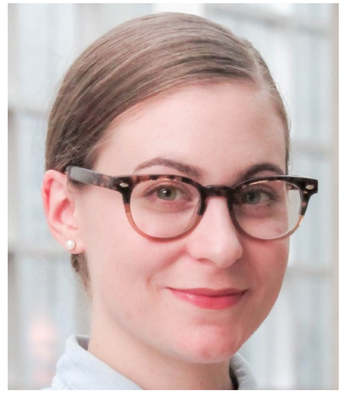
Björn Hartmann

Eric Paulos

Marti Hearst

Niloufar Salehi

Aditya Parameswaran



Sarah Chasins

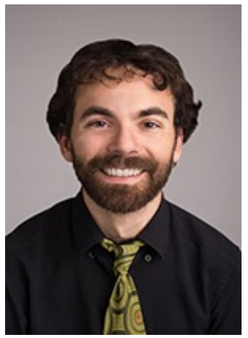
John Canny

John DeNero

Armando Fox

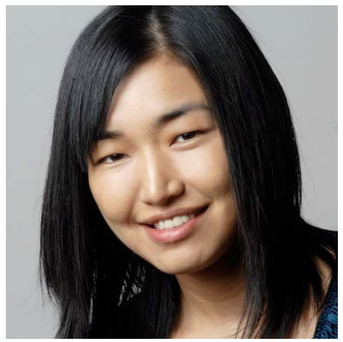
Anca Dragan

Dan Garcia



Josh Hug

Kosa Goucher-Lambert



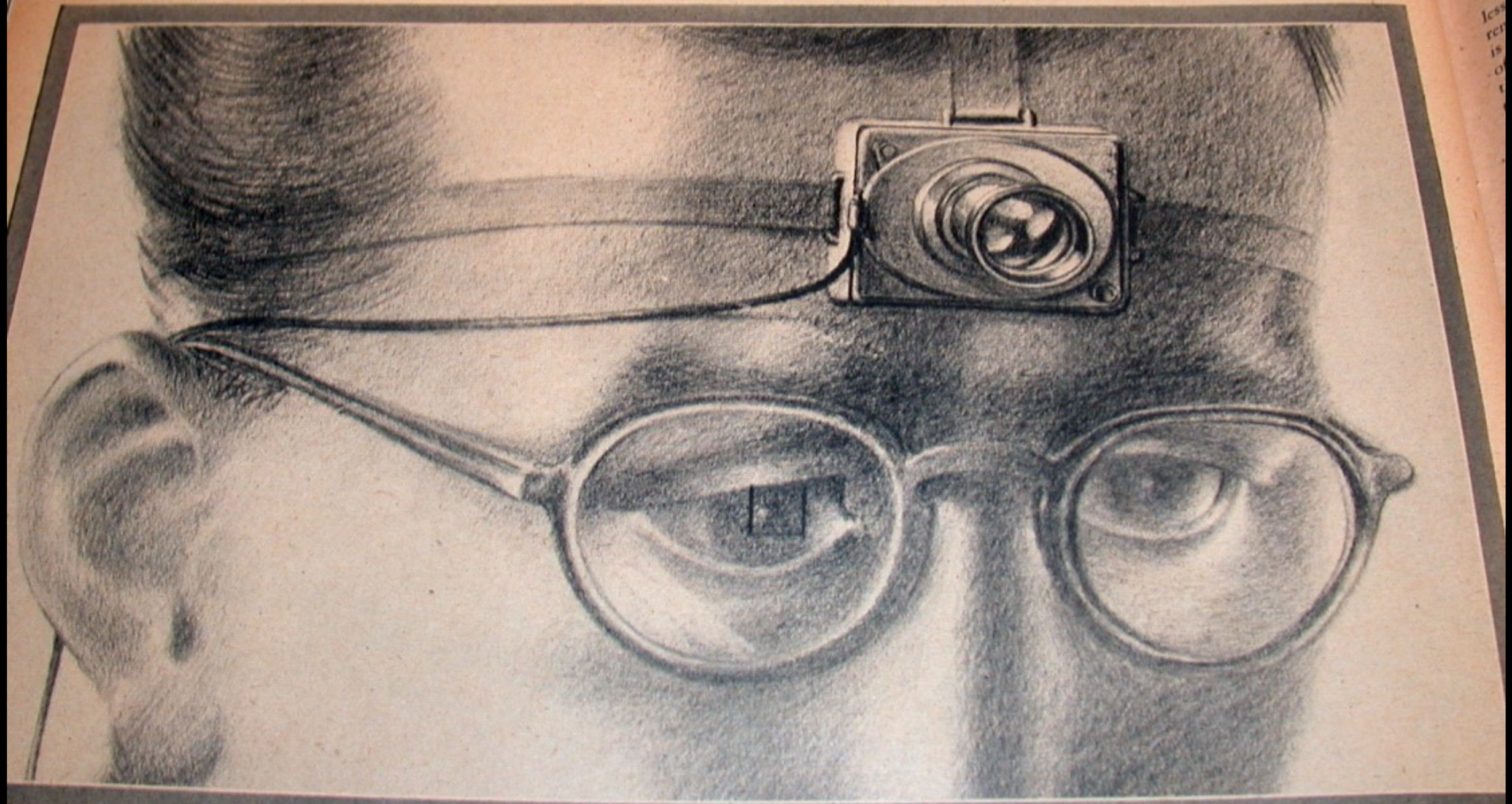
Kimiko Ryokai

Alice Agogino

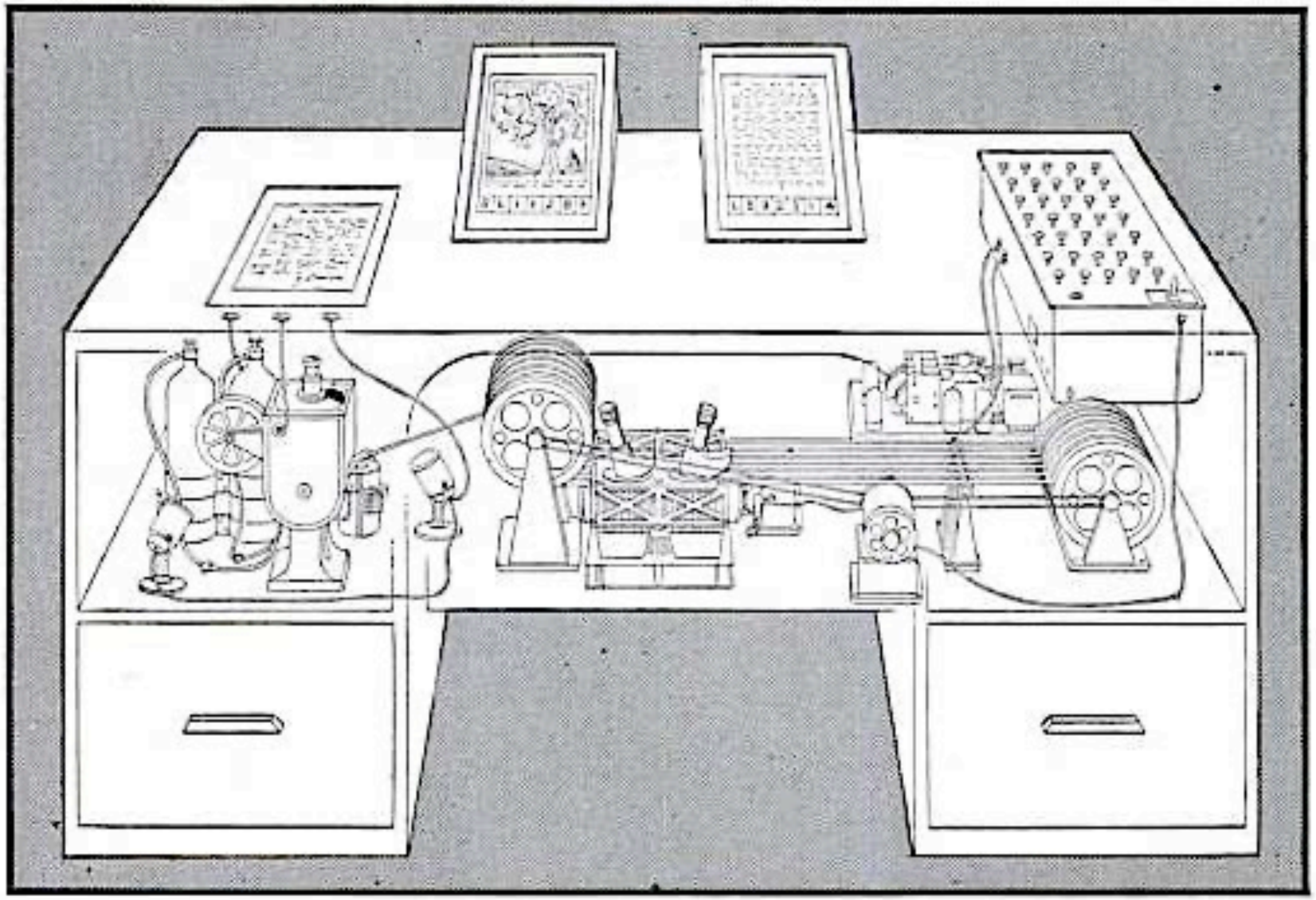
Greg Niemeyer

Ken Goldberg

Vannevar Bush (1945). "As We May Think," Atlantic Monthly 176 (July 1945) pp. 101-108.



THE FUTURE RECORDS EXPERIMENTS WITH A TINY CAMERA FITTED WITH UNIVERSAL-FOCUS LENS. THE SMALL SQUARE IN THE EYEGLASS AT THE LEFT SIGHTS THE O

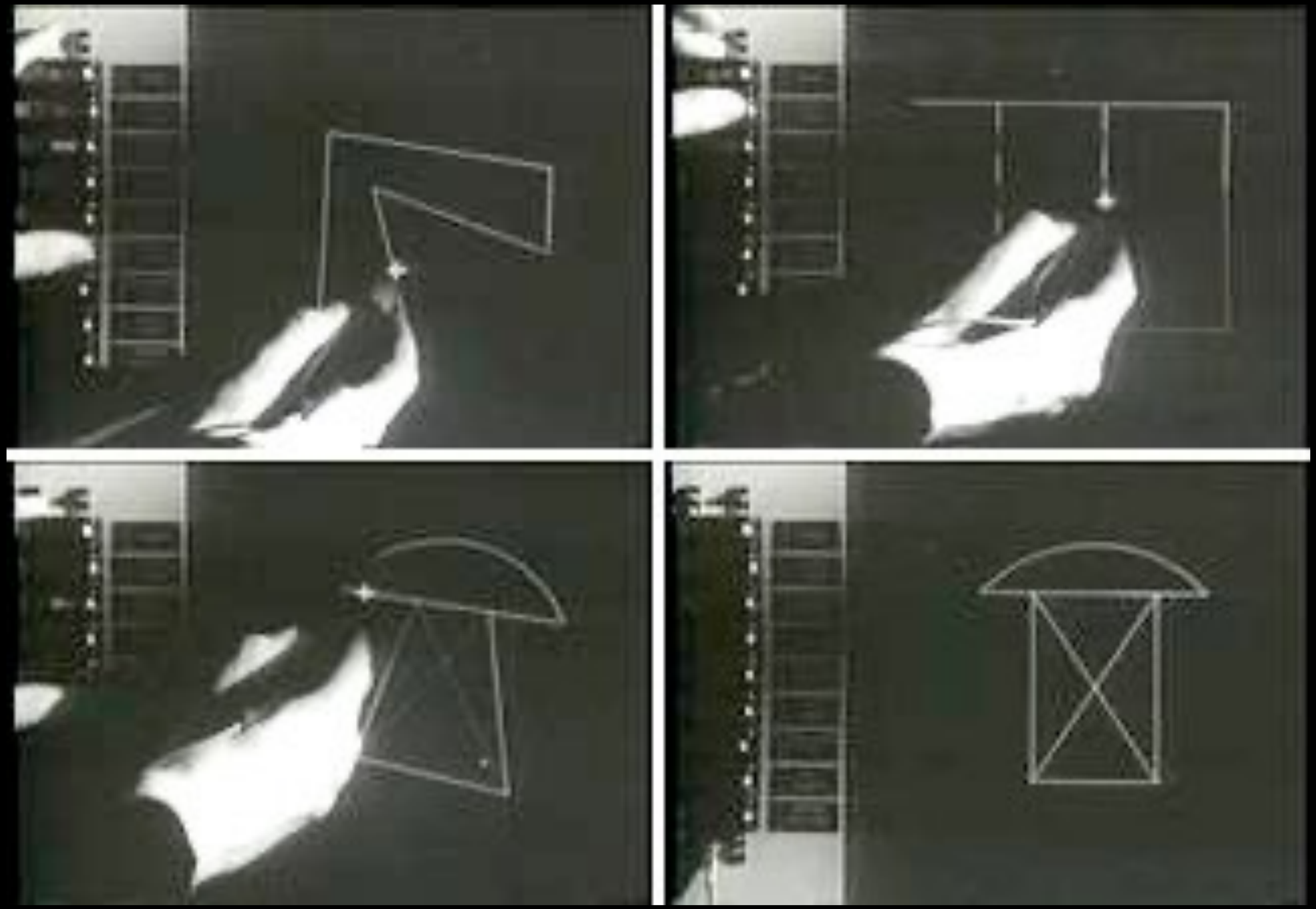


MEMEX in the form of a desk would instantly bring files and material on any subject to the operator's fingertips. Slanting translucent viewing screens magnify supermicrofilm filed by code numbers. At left is a mechanism which automatically photographs longhand notes, pictures and letters, then files them in the desk for future reference.

Memex inspires Ivan Sutherland

Ivan Sutherland. 1964. Sketch pad a man-machine graphical communication system. In Proceedings of the SHARE design automation workshop (DAC '64). ACM, New York, NY, USA, 6.329-6.346.

30



Ivan Sutherland.
1964. Sketch Pad

Sketch Pad inspires Doug Engelbart

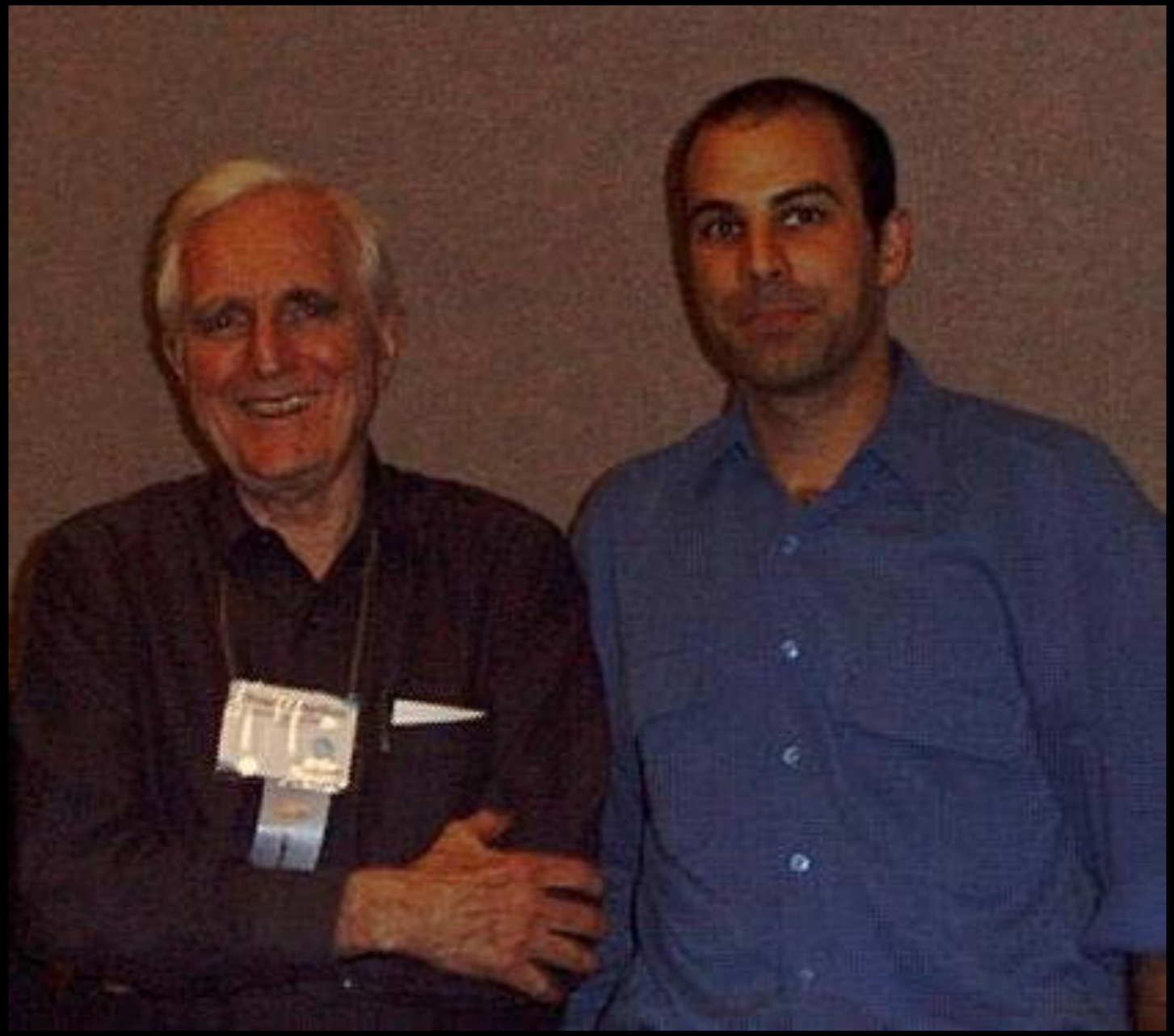
INSERT WORD
1

2A3 BANANAS
2A4 CARROTS
2A5 LETTUCE
2A6 BEANS
2B CANS 1
2C CEREALS
2D COLD LOCKER
2E FROZEN LOCKER
2F MISCELLANEOUS
3 SHOE STORE
4 HARDWARE
5 ART SUPPLY
6 DRUG STORE
7 LIBRARY

THE MOTHER OF ALL DEMOS

Doug Engelbart's December 9, 1968, computer demonstration at the Fall Joint Computer Conference in San Francisco. The 90-minute presentation essentially demonstrated almost all the fundamental elements of modern personal computing

- windows
- hypertext
- graphics
- video conferencing
- the computer mouse
- word processing
- dynamic file linking
- revision control
- collaborative real-time editor



Doug Engelbart and I in 1998

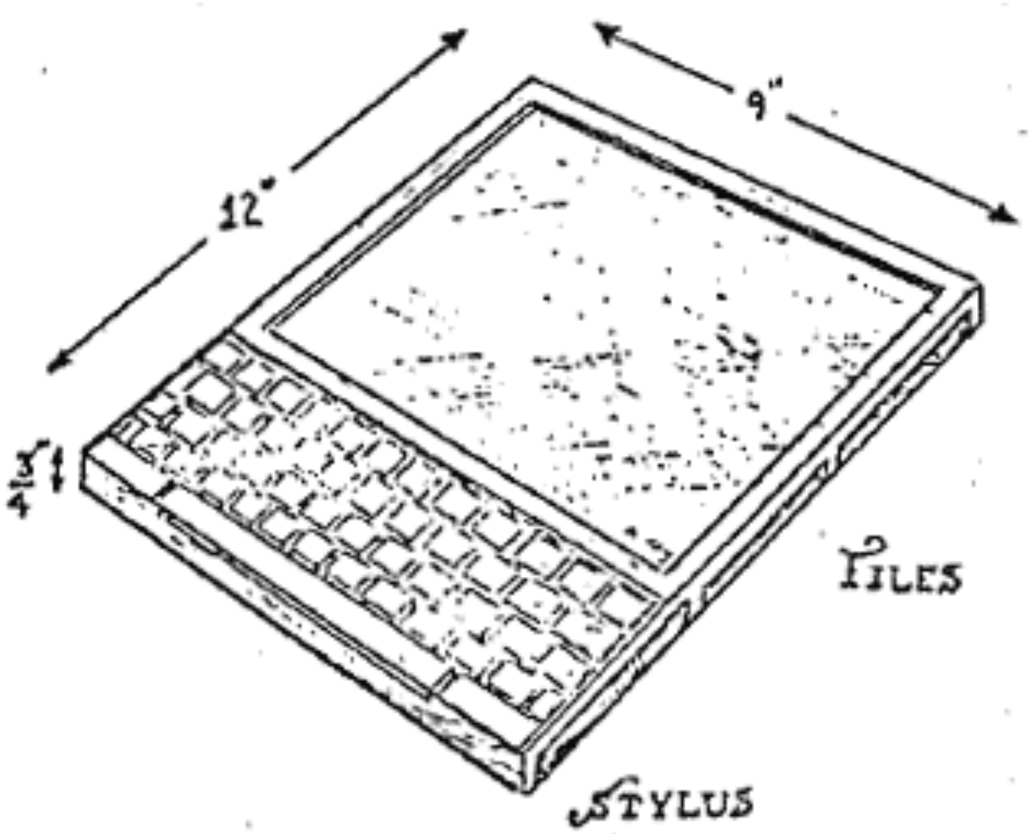
Engelbart inspires

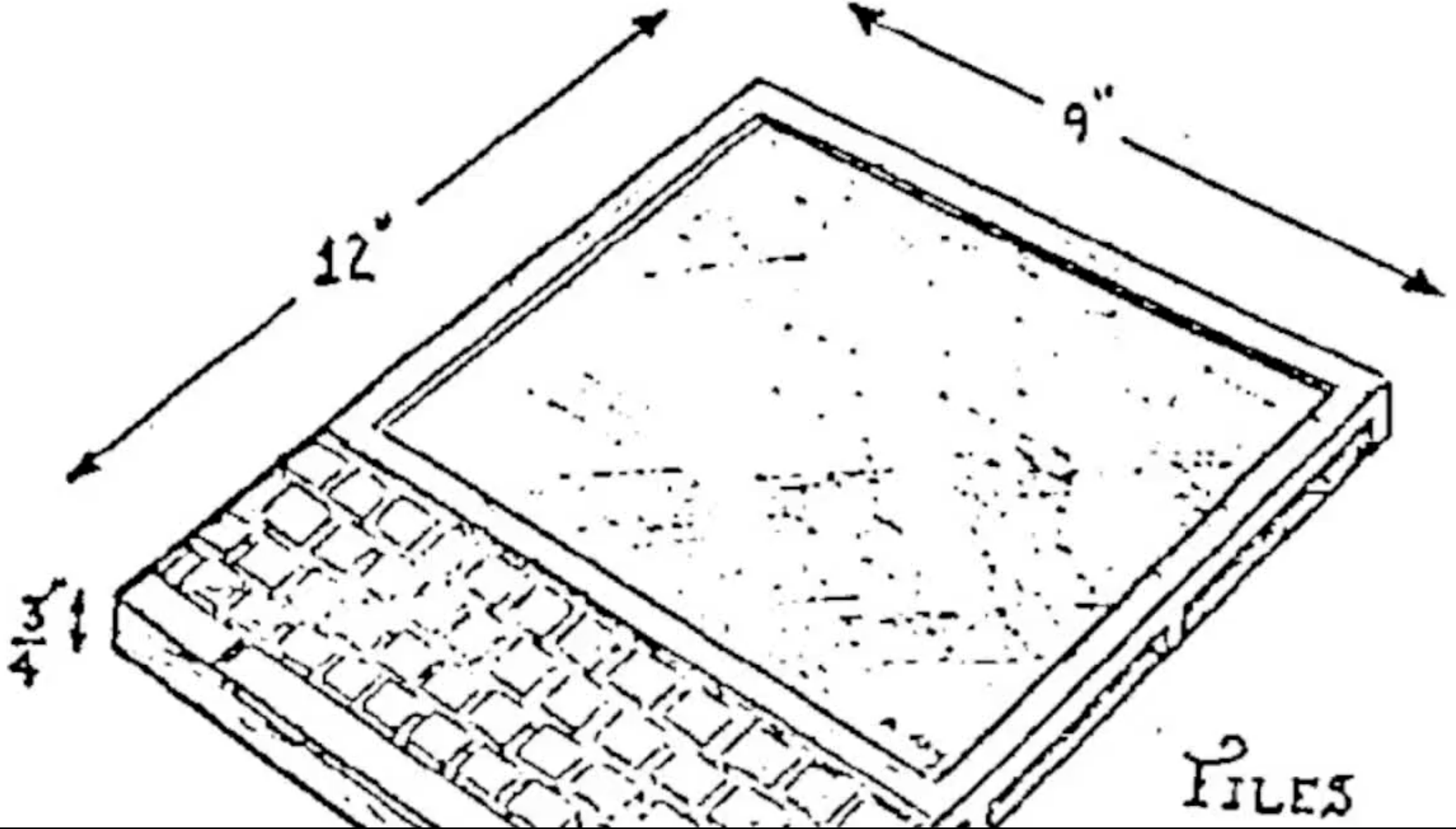
Alan Kay

“The best way to predict the future is to invent it.”

DYNABOOK

A personal computer for children of all ages

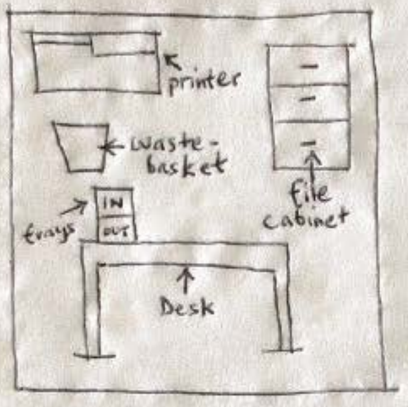




PILES

Engelbart inspires

Xerox PARC



Office Schematic

PRINT, FILE, DELETE, MAIL

↓

all are inter-doc actions

—"—

INTRA-DOC use cut & Paste physical metaphor

What's analog for INTER-DOC ??

↓

Grab & Move!!!

Xero Alto (1973)

Xerox Star (1981)

Xerox PARC inspires

Steve Jobs

Apple Lisa (1983)

TOKYU
2PM

Sara Kiesler (1984)
Social psychological aspects of computer-mediated communication

RELAX