

Designing Emerging Technologies

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Fall 2019



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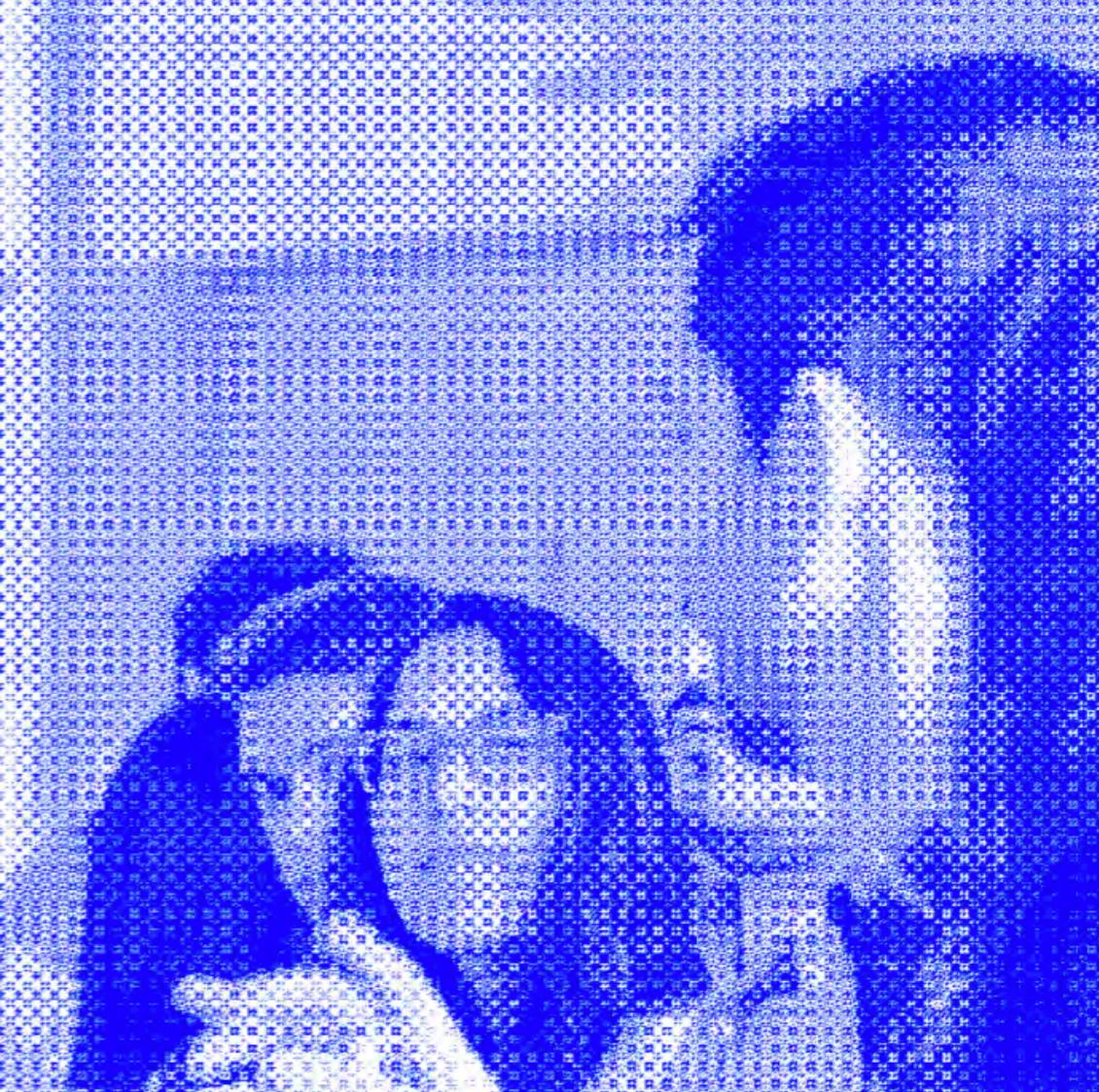


EXPERIMENT

Berkeley MDes

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Designing Tomorrow's Thoughtful Technologies Today









UNIVERSITY OF CALIFORNIA BERKELEY.

PAULOS ERIC J 10245772

Contract to NON TRANSFERABLE - REPLACEMENT CHARGE VALI-DINERSYSTEM GRUFFIN TECH









They always say time changes things, but you actually have to change them yourself.

Andy Warhol

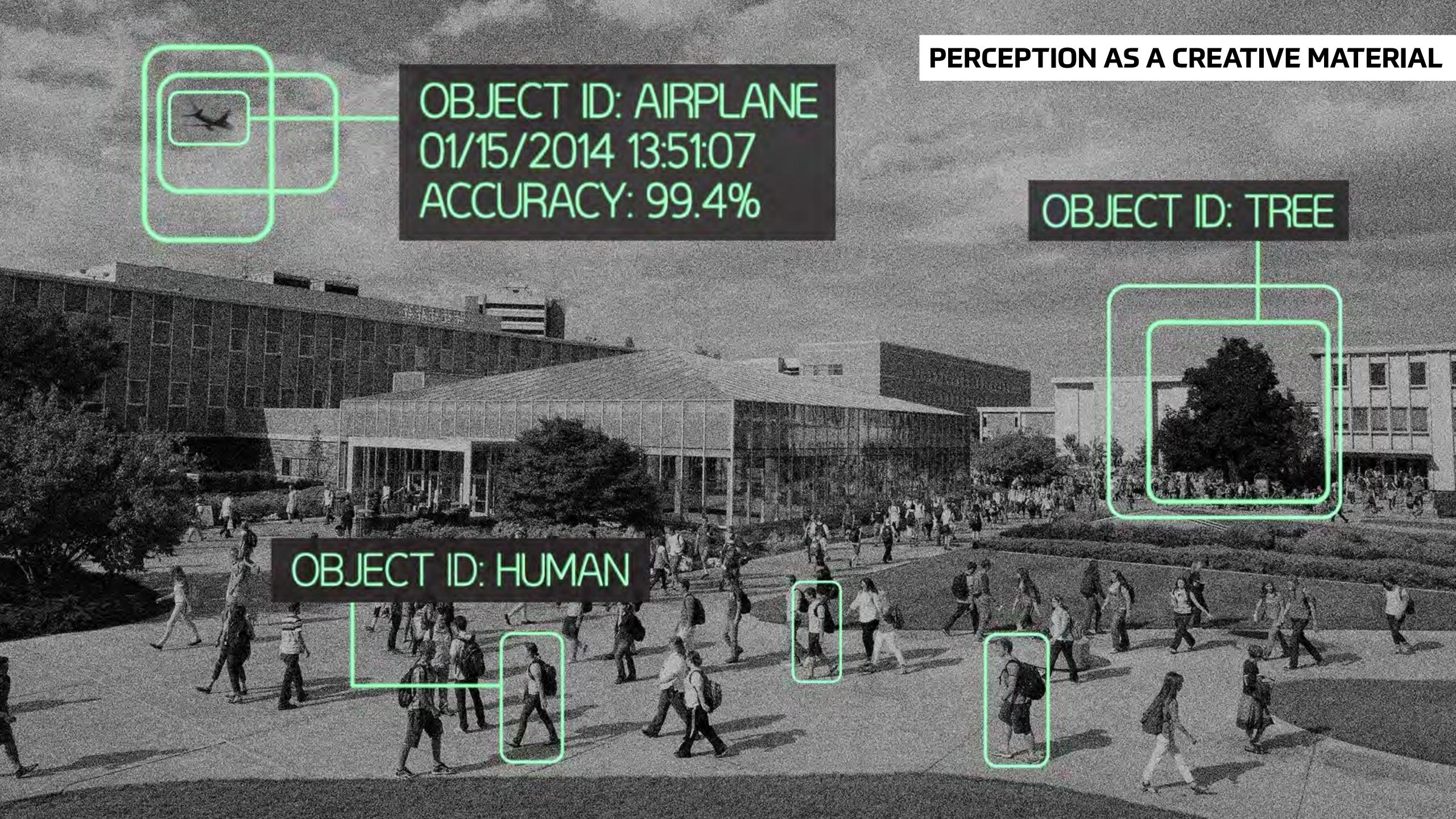


DET Designing Emerging Technologies

Fall 2019



Designing Emerging Technologies (DET) is an intensive, project-based studio course that focuses on the design of interactive artifacts realized through the process of deeply engaging with selected emerging technologies as rich creative material. Students are led through a sequence of projects of varying lengths (one to four weeks). Projects include both individual and team activities, with teams frequently changing in size and composition. DET introduces students to emerging technologies, supports them with expert viewpoints and selected literature, and quickly enables "handles" by which students first encounter a new technology, and then in teams, develop and refine final functional prototypes which are showcased and critiqued. Unlike classes that simply use a new technology as an endpoint, DET is designed to enable students to develop and refine the design skills that will enable them to be creative practitioners when encountering a range of current and future technologies. Engaging with these technologies as creative materials.





EXTRA-REAL AS A CREATIVE MATERIAL





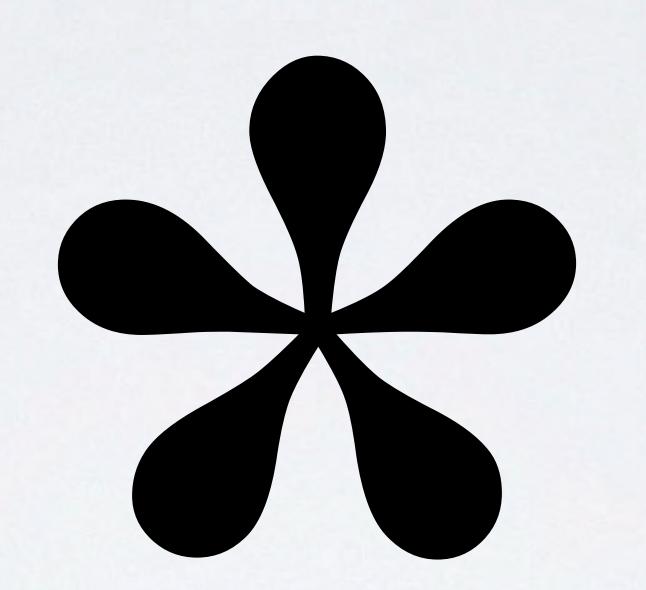
Perception

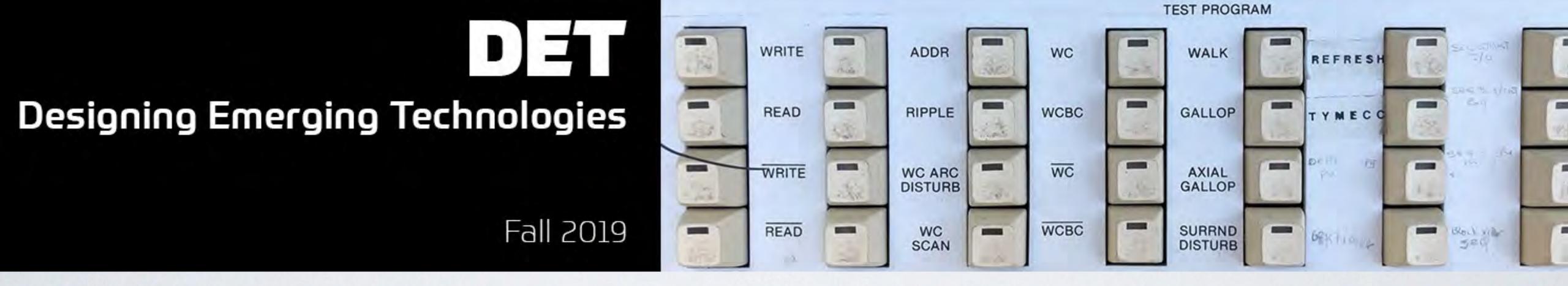


Conversation

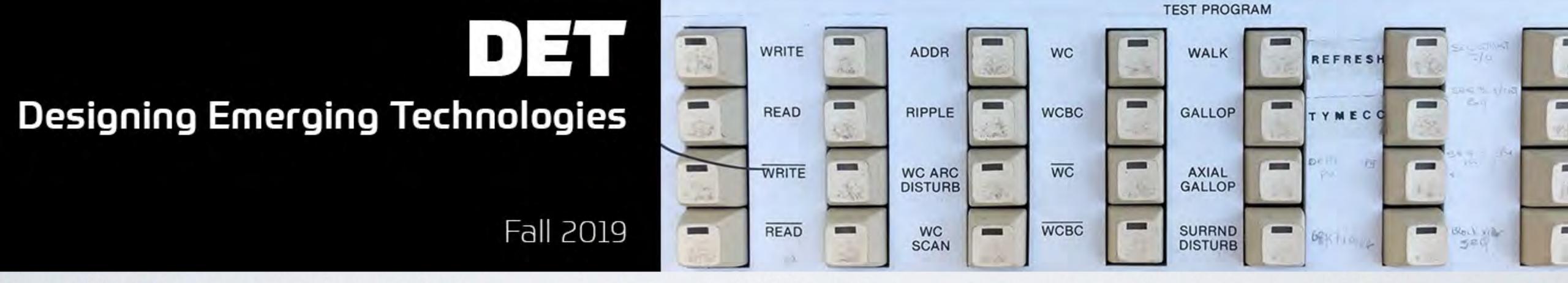
Extra-Real

Robot





PLASTIC

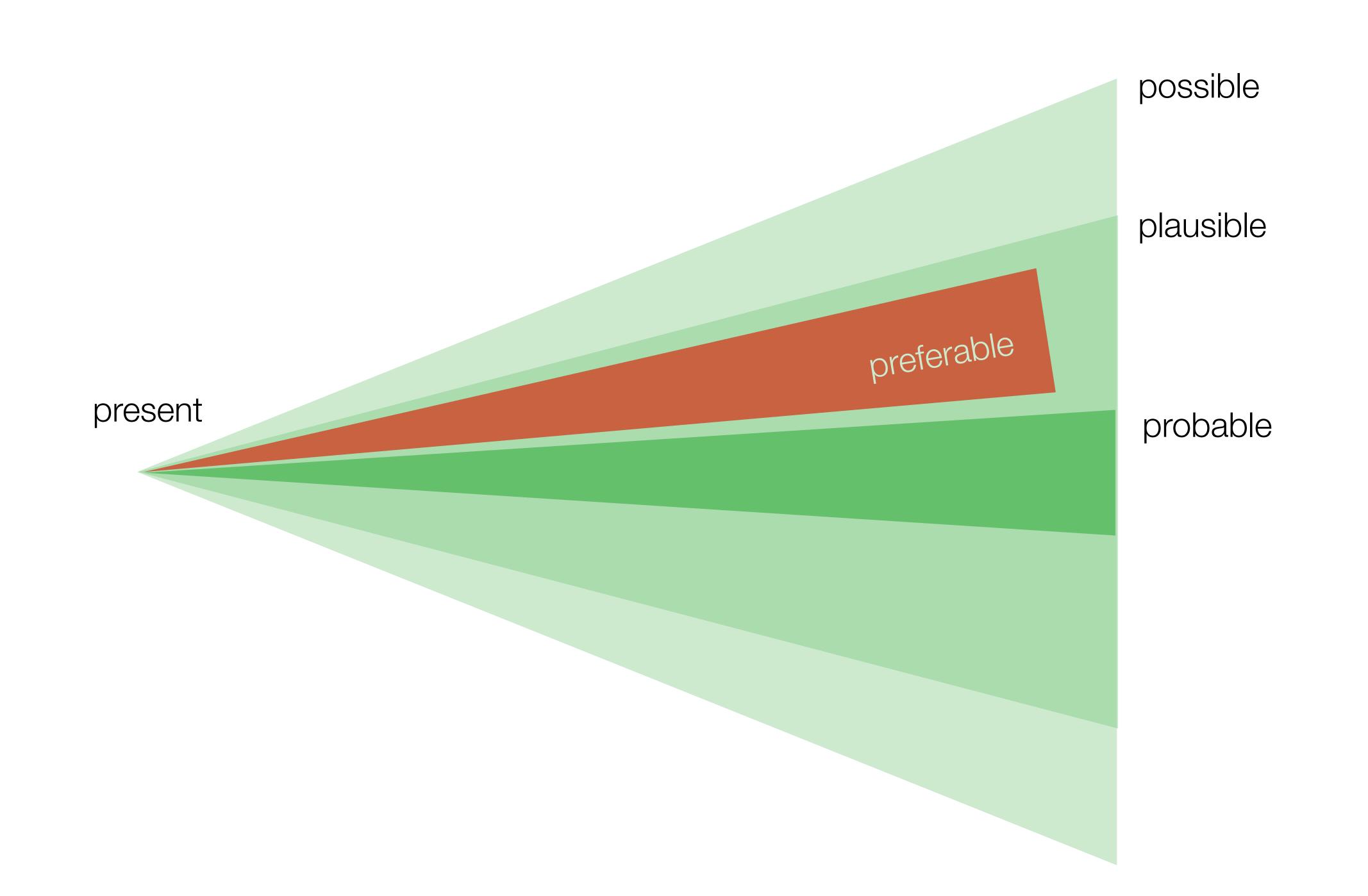


PLASTIC

adj. flexible, soft

PLASTIC DYNAMISM







AI FUTURES

Will Al make us all geniuses? NO

Will Al make us all morons? NO

Will AI destroy whole industries? YES

Will Al make us more empathetic? NO

Will Al make us less caring? NO

Will teens use AI for sex? YES

Were they going to have sex anyway? YES

Will Al destroy music? NO

Will Al destroy art? NO

But can't we go back to a time when... NO

Will All bring about world peace? NO

Will All cause widespread alienation WE WERE ALREADY

by creating a world of empty experiences? ALIENATED

AMATEUR

from amāre - to love

amātor - lover

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

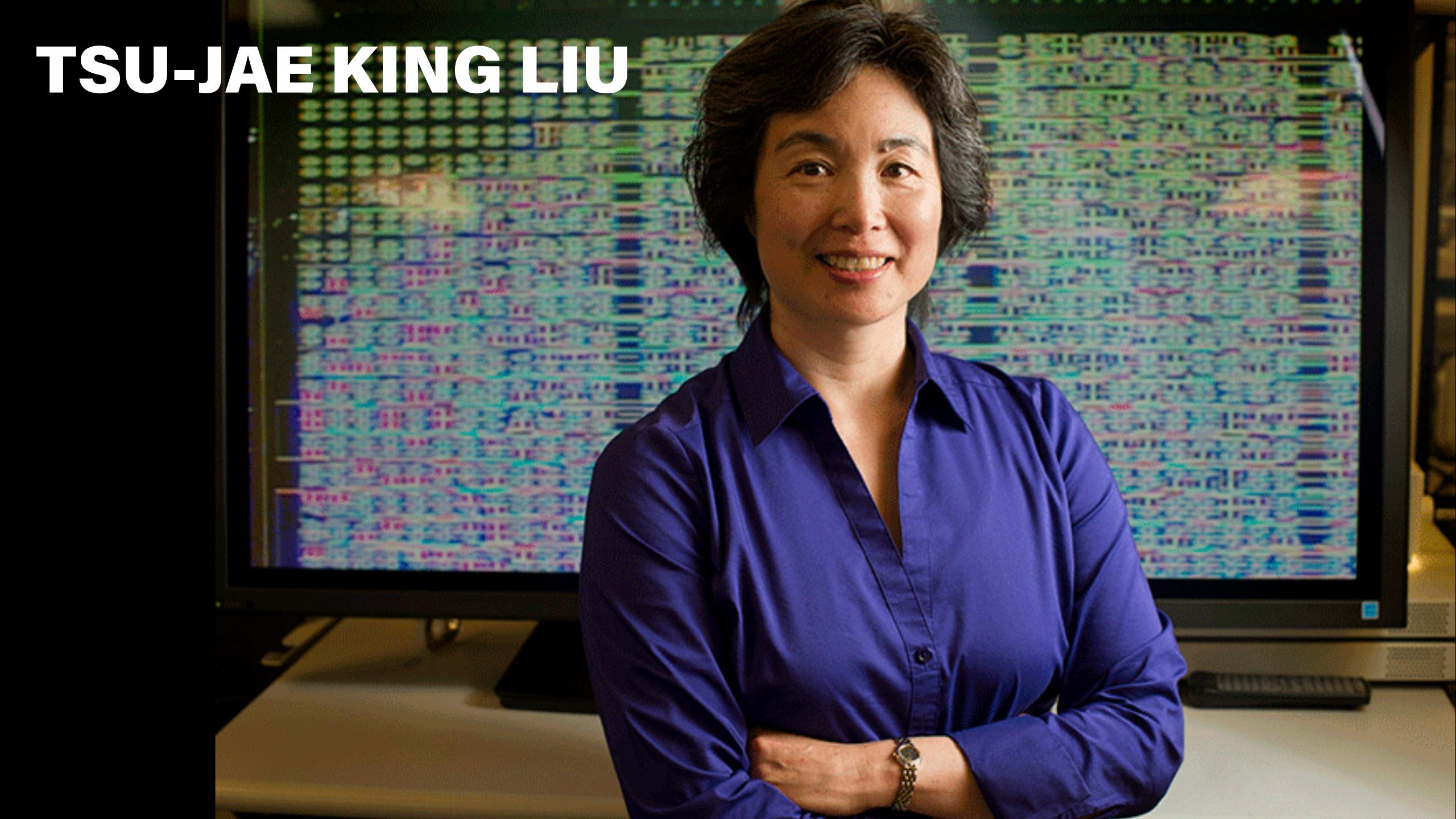
If I make a mistake please correct me

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

INCLUSIVE CLASSROOM?





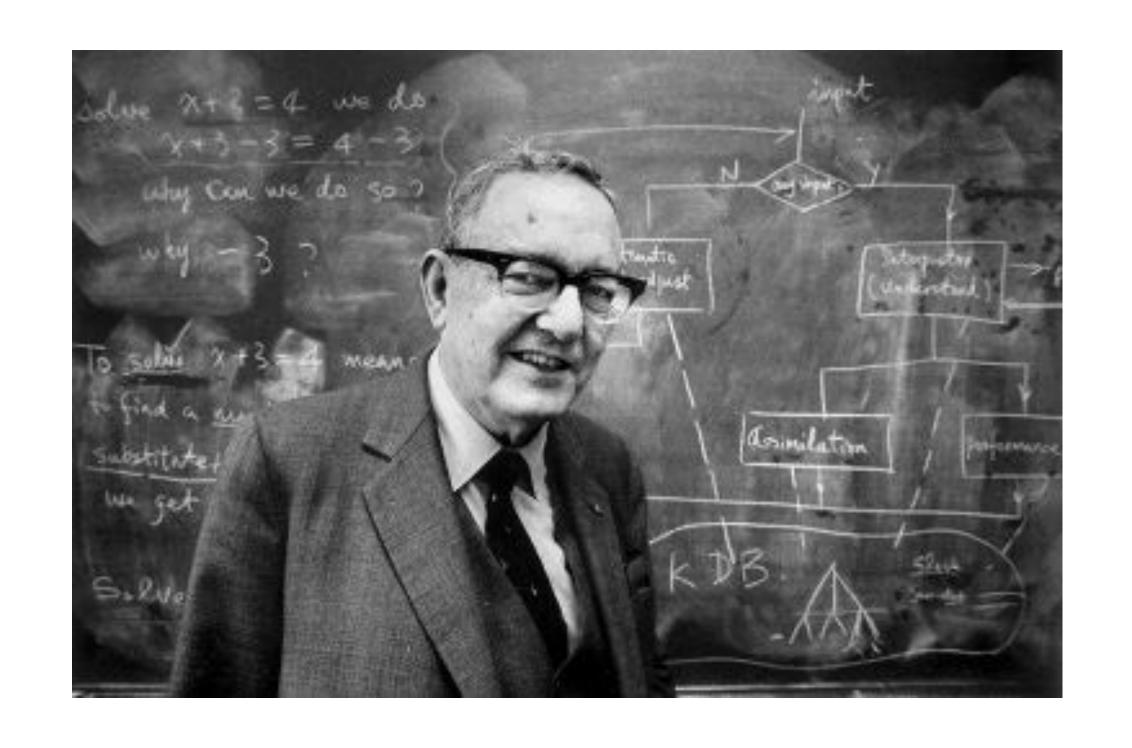






....And most important, we need not only the folks at [UC Berkeley or MIT or Stanford or the NIH but also the mom in West Virginia tinkering with a 3-D printer, the girl on the South Side of Chicago learning to code, the dreamer in San Antonio seeking investors for his new app, the dad in North Dakota learning new skills so he can help lead the green revolution.

That's how we will overcome the challenges we face: by unleashing the power of all of us for all of us. Not just for those of us who are fortunate, but for everybody. That means creating not just a quicker way to deliver takeout downtown but also a system that distributes excess produce to communities where too many kids go to bed hungry. Not just inventing a service that fills your car with gas but also creating cars that don't need fossil fuels at all.



Everyone designs who devises courses of action aimed at changing existing situations into preferred ones

- Herb Simon



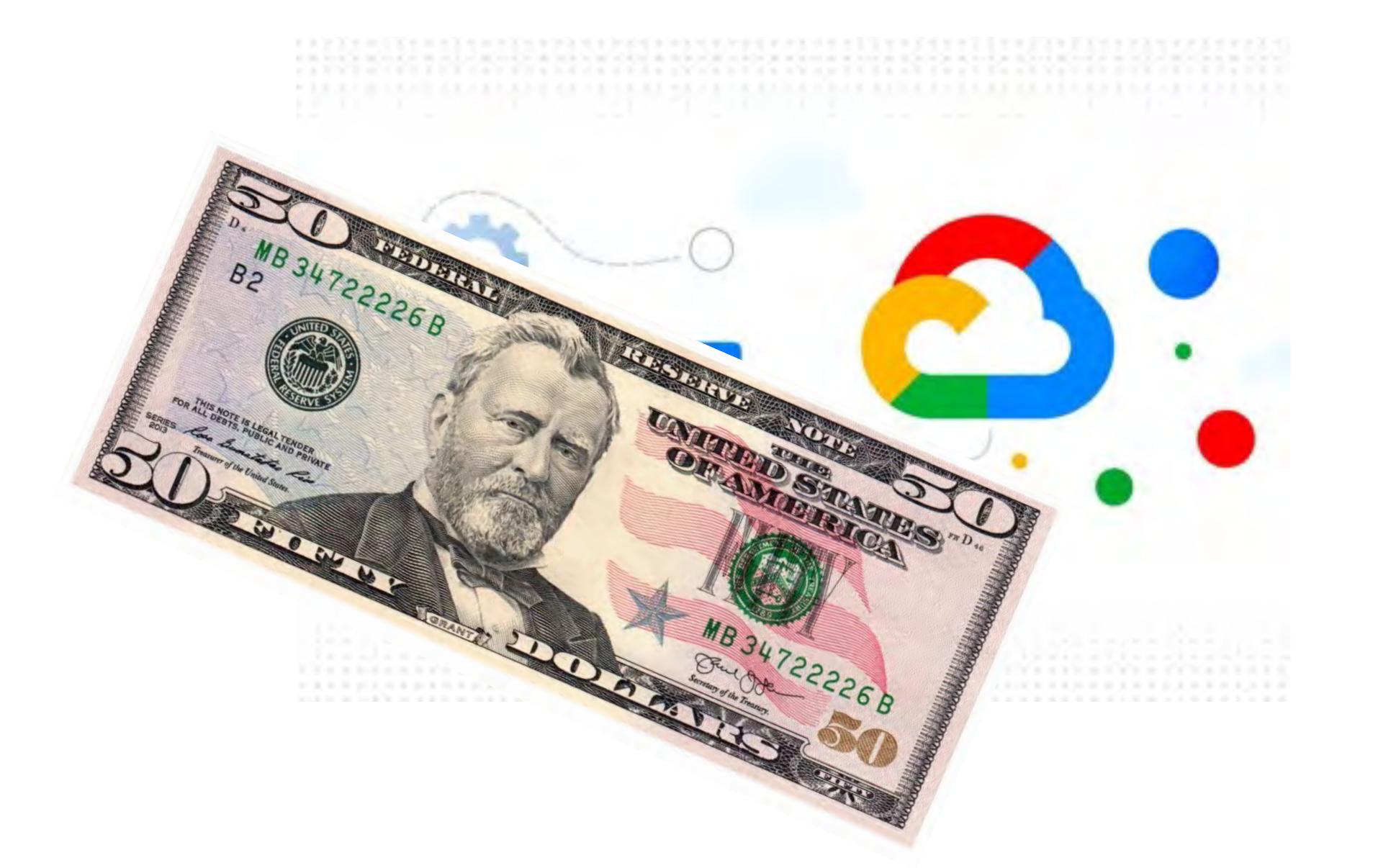
CITRIS INVENTION LAB





MAKER PASS

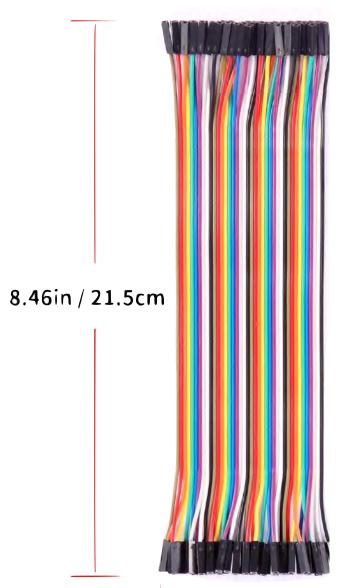












_2.16in / 5.5cm



Encountering
Materializing
Designing
Critiquing



Encountering Perception

Materializing Perception

Designing Perception

Critiquing Perception



Encountering Conversation

Materializing Conversation

Designing Conversation

Critiquing Conversation



Encountering Extra-Real

Materializing Extra-Real

Designing Extra-Real

Critiquing Extra-Real



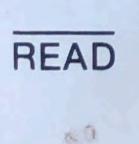
Encountering Robots

Materializing Robots

Designing Robots

Critiquing Robots

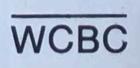






WC

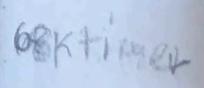
















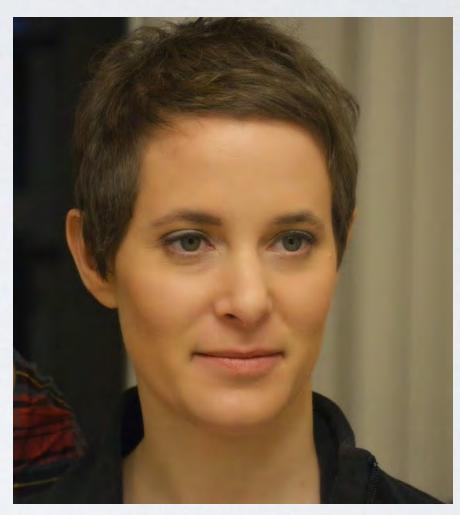
ENCOUNTERING

Readings

Historical Context

Expert Viewpoints

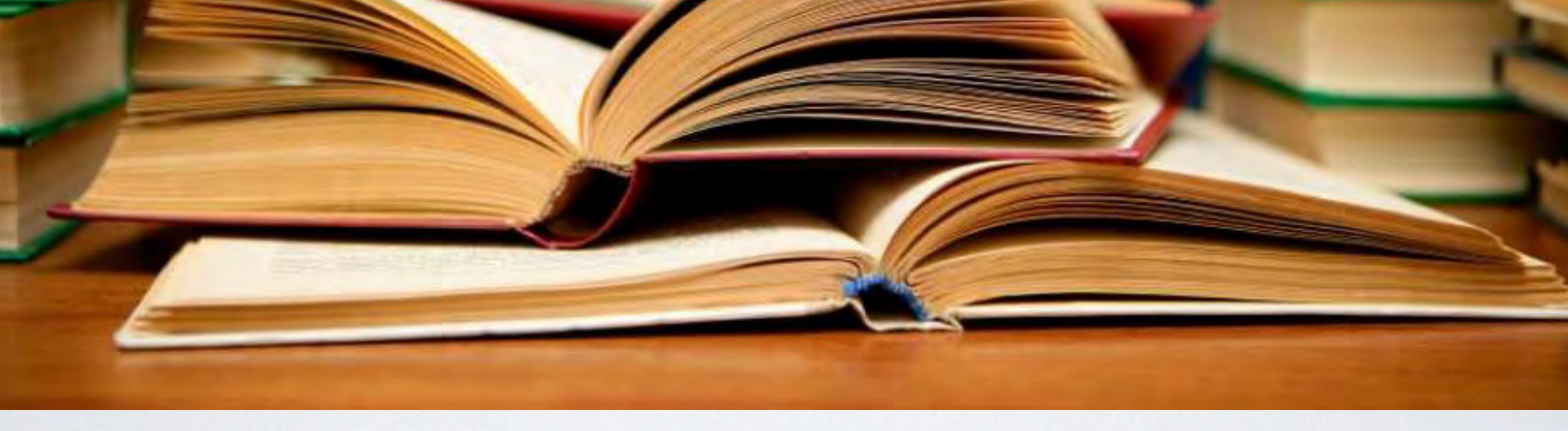
Encountering Activities



Shiry Ginosar



Jaron Lanier



Everyone is expected to read the readings

Two people will be selected for each reading to prepare a class presentation

You must submit a written reading response by 5pm the night before class

Each pair of students present one of the readings in class

Everyone is expected to engage in class discussions when readings are assigned

This counts towards your class participation grade



MATERIALIZING

Technology Lecture

API Handles and Initial Literacy

Studio Activity

DESIGN assignment



DESIGNING

Responding to a Design Prompt as a Team 4-5 People per Team



CRITIQUING

In class critique

Video

Documentation

http://teaching.paulos.net/DET2019/



Course Description

Designing Emerging Technologies (DET) is an intensive, project-based studio course that focuses on the design of interactive artifacts realized through the process of deeply engaging with selected emerging technologies as rich creative material. Students are led through a sequence of projects of varying lengths (one to four weeks). Projects include both individual and team activities, with teams frequently changing in size and composition. DET introduces students to emerging technologies, supports them with expert viewpoints and selected literature, and quickly enables "handles" by which students first encounter a new technology, and then in teams, develop and refine final functional prototypes which are showcased and critiqued. Unlike classes that simply use a new technology as an endpoint, DET is designed to enable students to develop and refine the design skills that will enable them to be creative practitioners when encountering a range of current and future technologies. Engaging with these technologies as creative materials.

We will cover four creative materials this semester:

- Perception as a Creative Material: Computer vision using Google Cloud Vision on Raspberry Pi
- Conversation as a Creative Material: Speech recognition using Google Cloud Speechto-Text and Google Cloud Text-to-Speech on Raspberry Pi
- 3. Extra-Real as Creative Material: virtual reality using Oculus Quest
- 4. Robots as Creative Material: autonomous mobility using Husqvarna Automower

COURSE STRUCTURE

DET begins with an intensive pre-module on digital fabrication and Raspberry Pi technologies. Afterwards, the course is separated into four "blocks": perception, conversation, extra-real, and robots, each engage with a specific emerging technology as a design material. For each block (i.e. Perception, Conversation, Extra-Real, and Robots) students will progess across four stages:

- 1. Encountering
- 2. Materializing
- 3. Designing
- 4. Critiquing

Coordinates

Course: DESINV 290-6 and DESINV 190-6

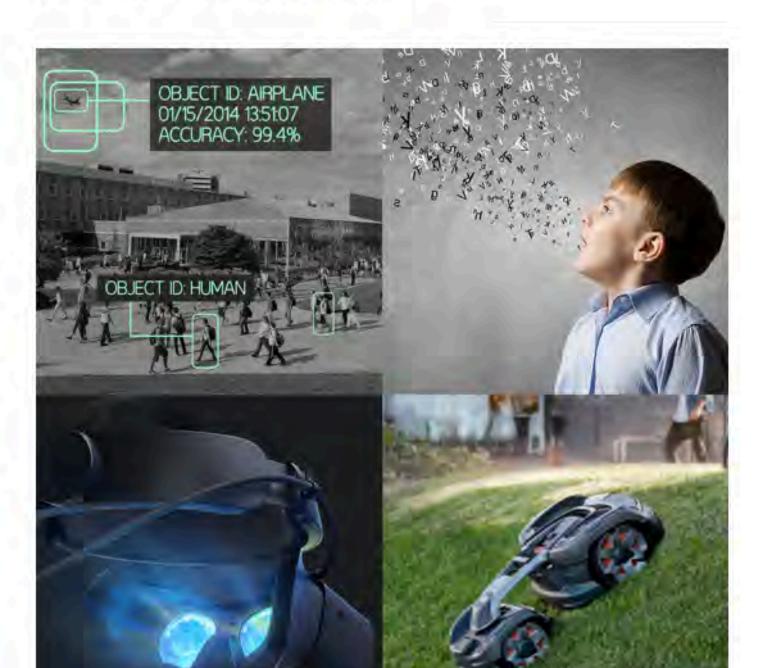
Lectures: Mon+Wed 10-12 in 210 Jacobs Hall

Instructors: Professor Eric Paulos, Dr. Vivek Rao, and Dr. Adam Hutz

Final Presentations: Tue 10 Dec during RRR week in 210 Jacobs

Public Showcase: Wed 11 Dec during RRR week in 210 Jacobs

Final Materials Due Friday 13 Dec at 11:59PM



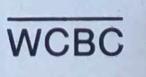




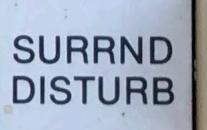


WC















YOU MUST!

30 Sep PROJ 01 Critique

21 Oct PROJ 02 Critique

13 Nov PROJ 03 Critique

10 Dec Final Critique

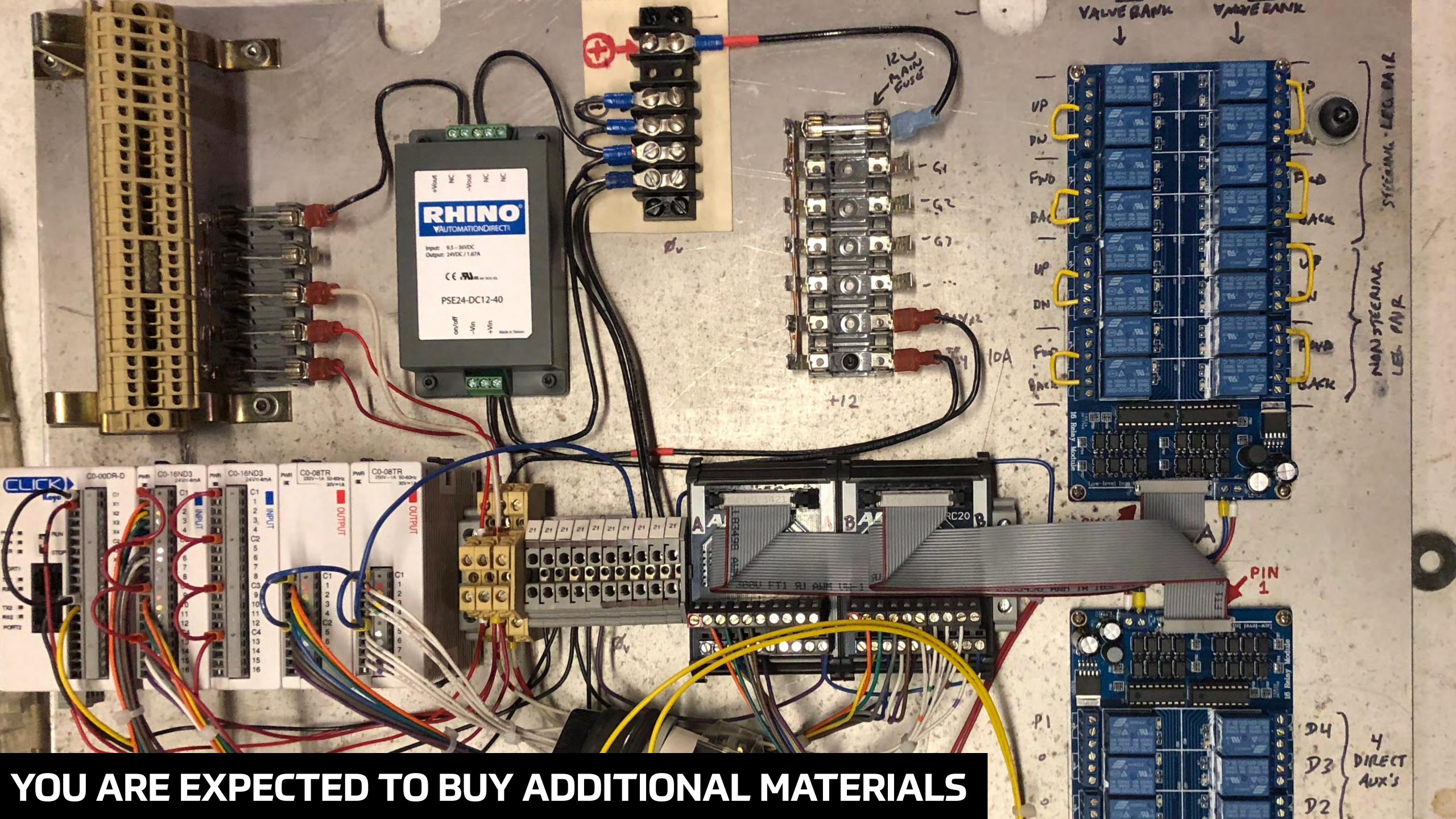
12 Dec Final Showcase

No overlapping classes — Attendance (classes are not recorded)

Work with your team in lab and outside of class







GRADING

20% PARTICIPATION

10% INDIVIDUAL DESIGNS

45% TEAM PROJECTS 1-3 (15% each)

25% FINAL PROJECT



Be there!

Critique days mandatory attendance

If you are not in class or late we will deduct from your attendance grade.

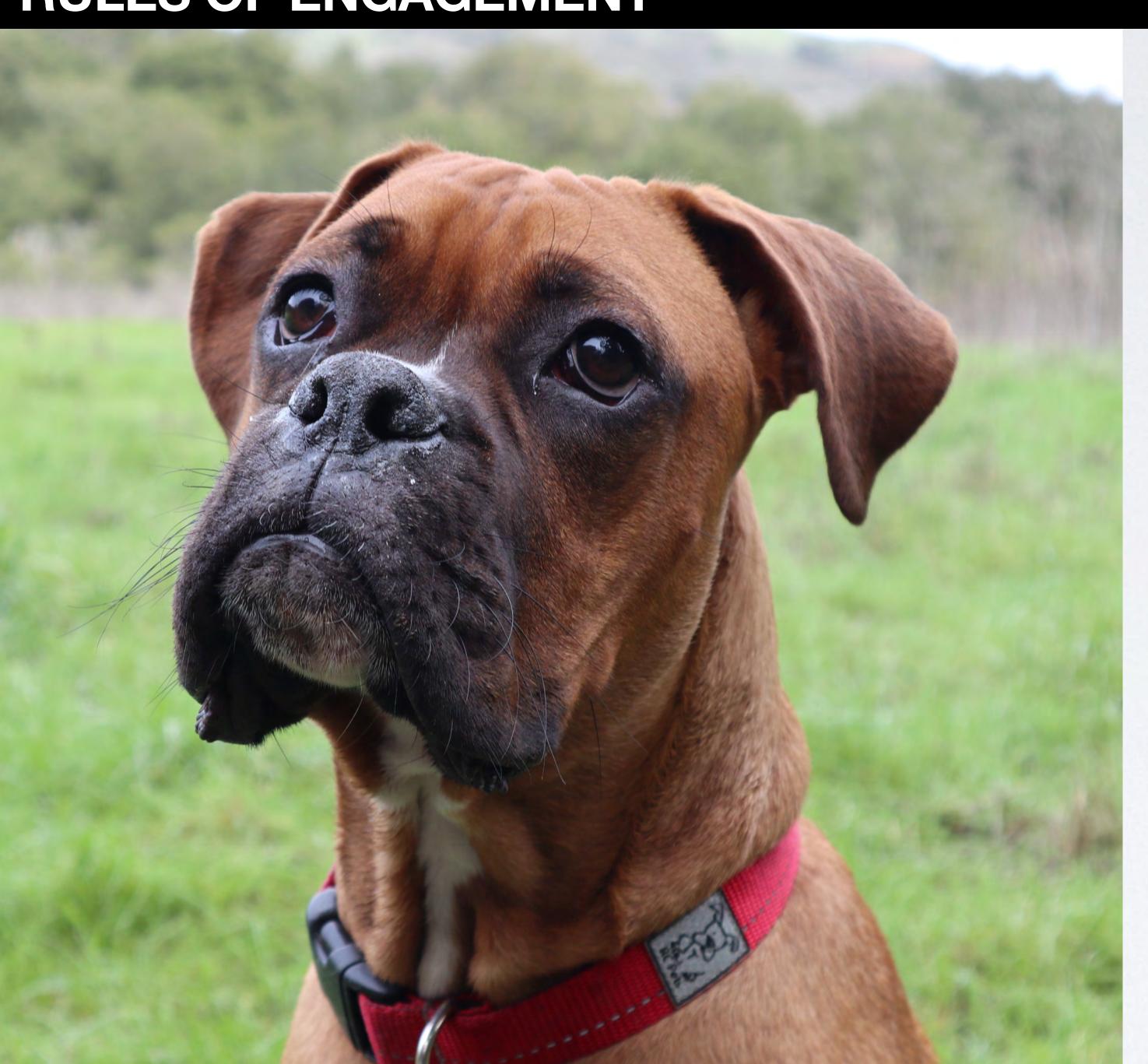
There will be no exceptions



Be active!

During the in class critique

everyone is expected to be
engaged in the discussion



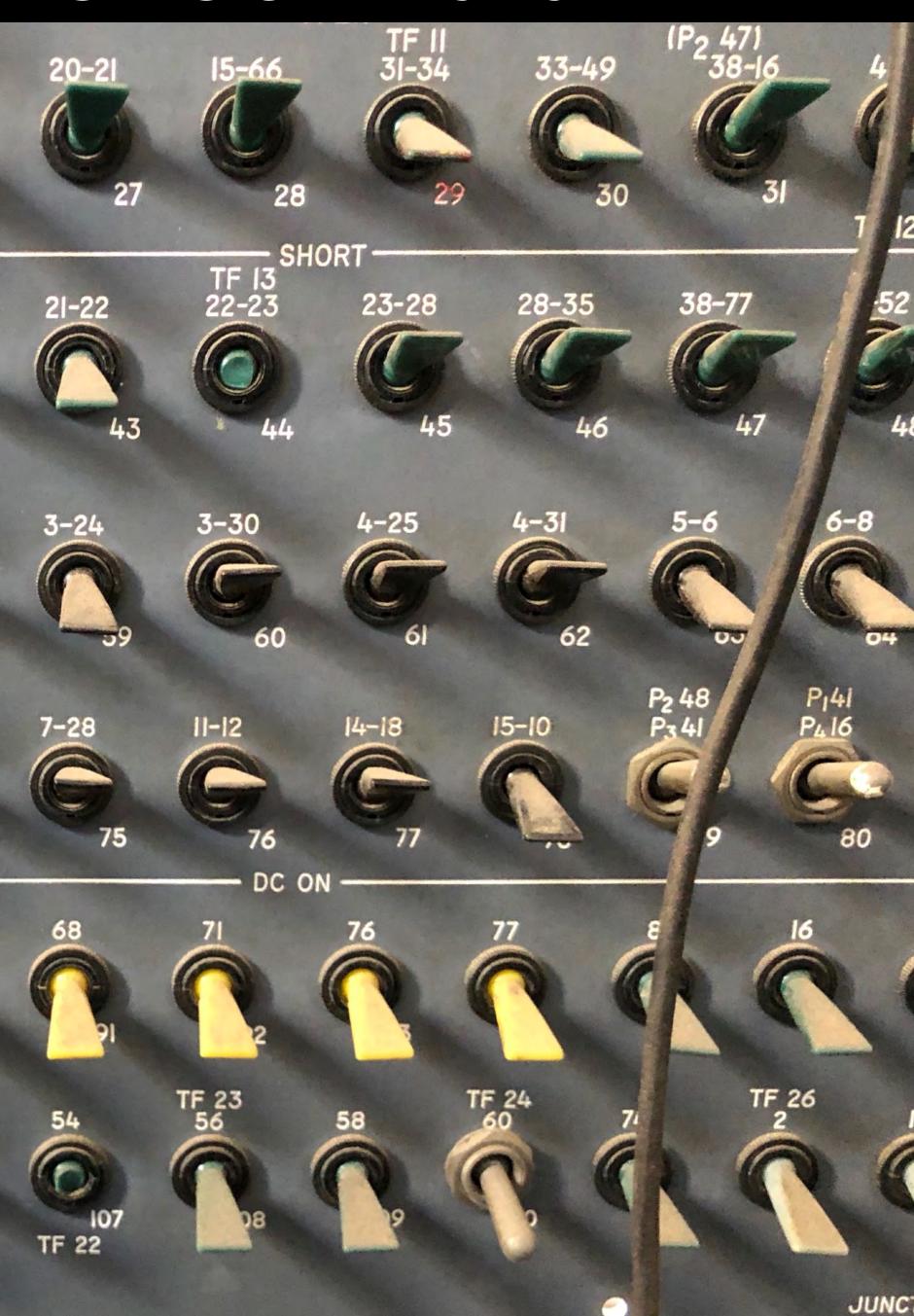
Be attentive!

no laptops, phones, electronics out or used during critique and selected other parts of class

SECOND HAND SMOKE

SECOND HAND SCREEN





Attendance of all classes is mandatory

You are allowed three absences for the semester without penalty (except critique days); thereafter you will receive zero credit for the missed studio.

To receive an additional excused absence, you must ask in advance, and receive an acknowledgment from an instructor.



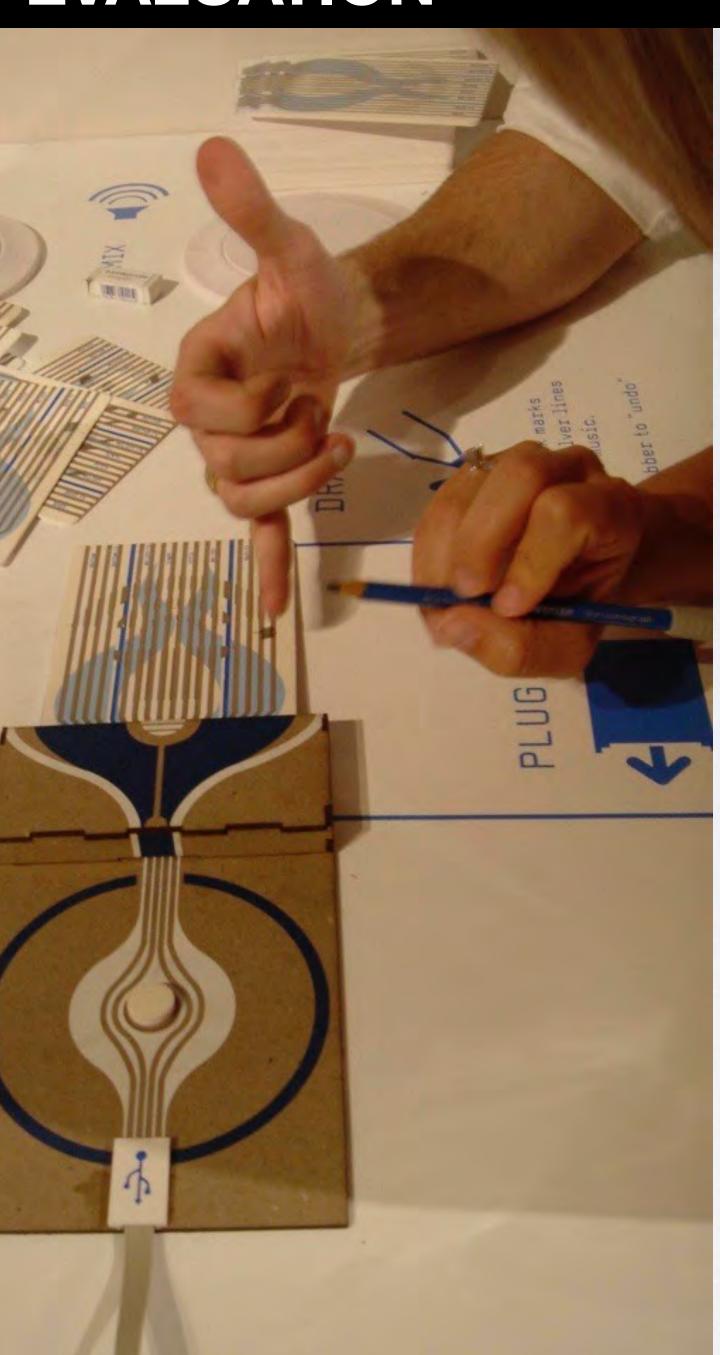
Excusable absences include family emergencies, job interviews, and presenting at a conference.

It **does not** include wanting to leave early for long weekend or vacation.

To receive credit for attendance, you must arrive on time.

No late assignments will be accepted

EVALUATION



Assignments, timely attendance, and in-class and team participation are a critical part of the grade

For projects done in teams, students will be graded on individual contributions as well as synthesis with the team

The process of exploration is as important as the final product, so it is important that you manage time well and devote time to working on the projects during the week

If class time is given as a worksession and is not put to good use, students' grades will be penalized.



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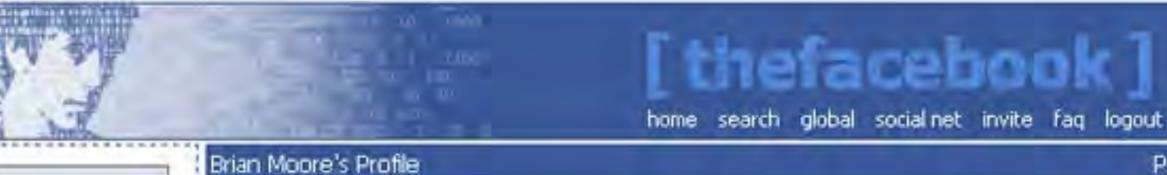


HEADLINE ACTIVITY



Future Headlines 10 Years from now • 2029





quick search 30

My Profile [edit]

My Friends My Groups

My Parties

My Messages My Account

My Privacy

summer Jewish Jewish Adventure New York City



Puget Sound



Send Brian a Message

Connection

Poke Hm!

You are in a relationship with Brian.

Mutual Friends

You have 19 friends in common with Brian.

Access

Brian is currently logged in from a non-residential location.

Friends at Puget Sound







Kerala Hise

Amy Graeber

Information

Account Info:

Brian Moore Name: Member Since: May 21, 2005 July 19, 2005 Last Update:

Basic Info:

Puget Sound '09 School:

Status: Student Male: Sex: Todd 311 Residence: Birthday: 09/02/1986

Shorewood, WI 53211 Home Town: Shorewood Hi '05 High School:

Contact Info:

bmcore@ups.edu Email:

DoctaBu Screenname: Mobile: 414,702,7426

http://www.doctabu.com Websites:

http://www.livejournal.com/users/doctabu http://www.flickr.com/photos/doctabu

Personal Info:

Looking For: Friendship Interested In: Women

Relationship Status: In a Relationship with

Rachel Buethe (Tiny Tykes Day Care)

Very Liberal Political Views:

Film, Graphic Design, Video Editing, Interests:

Computers, Bowling, Dancing, Acting, Singing, Listening to Decent Music,

Sleeping, Being Crazy

Beck, The Beatles, They Might Be Glants, Favorite Music:

Phoenix, Paul Simon, OutKast, Avenue Q, Radiohead, Red Hot Chili Peppers, Steely

2005 5.5 million users















UberCab









Next-Generation Car Service



MUSEUM OF MOBILE PHONES OPENS IN BERKELEY! COME CHECK OUT YOUR PARENTS COMMUNICATION DEVICES

Atom tests 'affected IQ'



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THE BROKE

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HER A MA I

THE RESERVE TO

THE INTERNET IS SHUTDOWN BY A COMPUTER BATTLING WITH DEPRESSION

Atom tests 'affected IQ'



read "All ours busing in the seas where solice-131 one recorded from the first Children

WIFE-STEALING SUPERAND See He

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Atom tests 'affected IQ'



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SLEAR COP



PERSON MARRIES A SELF-DRIVING CAR CLAIMING, "IT JUST GETS ME"

Atom tests 'affected IQ'



read, "All were located in the seas where solice-131 was recorded from the first Children

WIFE-STEALING

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THE PERSON NAMED IN



ALL POLITICIANS NOW REQUIRED TO PARTICIPATE IN YEAR-LONG IMMERSIVE VR TRAINING TO BUILD **EMPATHY AND GAIN PERSPECTIVE**

Atom tests 'affected IQ'



read "All ours busing in the seas where solice-131 one recorded from the first Children

WIFE-STEALING

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ANOTHER CURE TO CANCER FOUND BY DANCER SCIENTIST TEAM WHO PHYSICALLY NAVIGATE AR CELL STRUCTURES

Atom tests 'affected IQ'



read "All ours busing in the seas where solice-131 one recorded from the first Children

WIFE-STEALING

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YOUR TURN...

5 min

Groups

3–4 ideas

1 idea per sticky note

Write big

Work from our four Creative Materials

Future technology ...

IT'S 2029

Perception



Conversation

Robot

Extra-Real