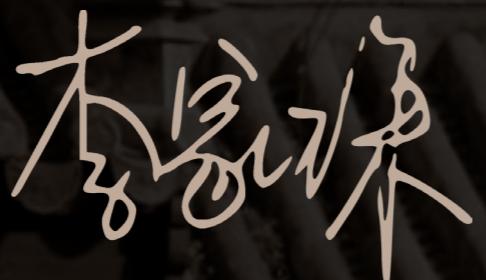


First Name: Jiachen
Last Name : Li
IU Num : IU002485654

I certify that the work included in this portfolio is my own original work. Work included which was conducted as a part of a team or other group is indicated and attributed as such the other team members are named and a true description of my role in the project is included.

Signature:

A handwritten signature in Chinese calligraphy, featuring fluid, expressive strokes.

OUTLINE

3	About Me
4	Research 1 Video-based Parent- child Relationship Prediction
7	Research 2 Unintentional Touch Detection
10	Project 1 Stress App Design
13	Project 2 Digital Stuff
16	Project 3 TextEx App Design
19	Project 4 Weather App Design
21	Project 5 Interesting Application
23	Project 6 Some Craft
25	Project 7 Personal Website
29	END

*All the background pictures in the portfolio are captured by myself!



ABOUT ME

I am **Jiachen Li** from Beijing University of Posts and Telecommunications (**BUPT**), majoring in Electronic Information Science and Technology (**EE**). I am interested in **HCI**. Besides, I love **photography**, sketching and drawing, travelling and my cat Jacob.

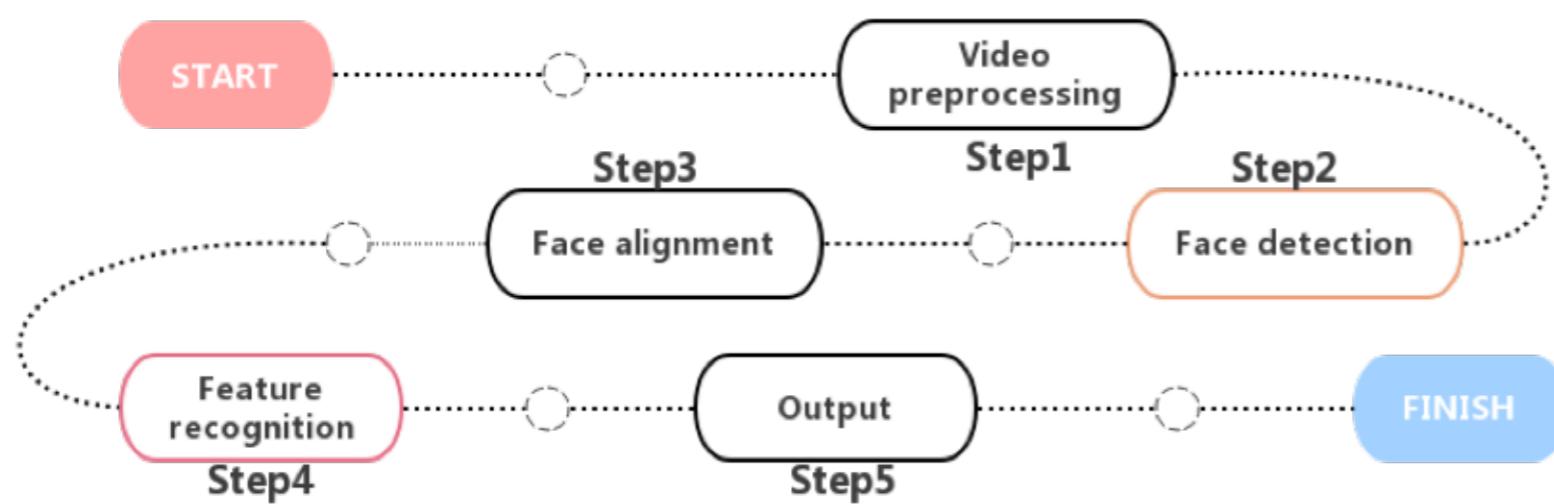


1

Video-based Parent-child Relationship Prediction

Ying Sun*, **Jiachen Li***, Yiwen Wei, Haibin Yan. **Video-based Parent-Child Relationship Prediction**, IEEE VCIP, 2018.

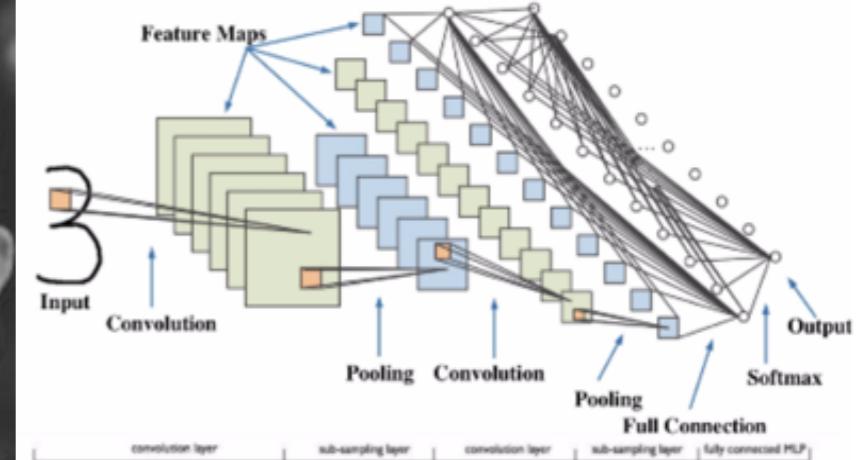
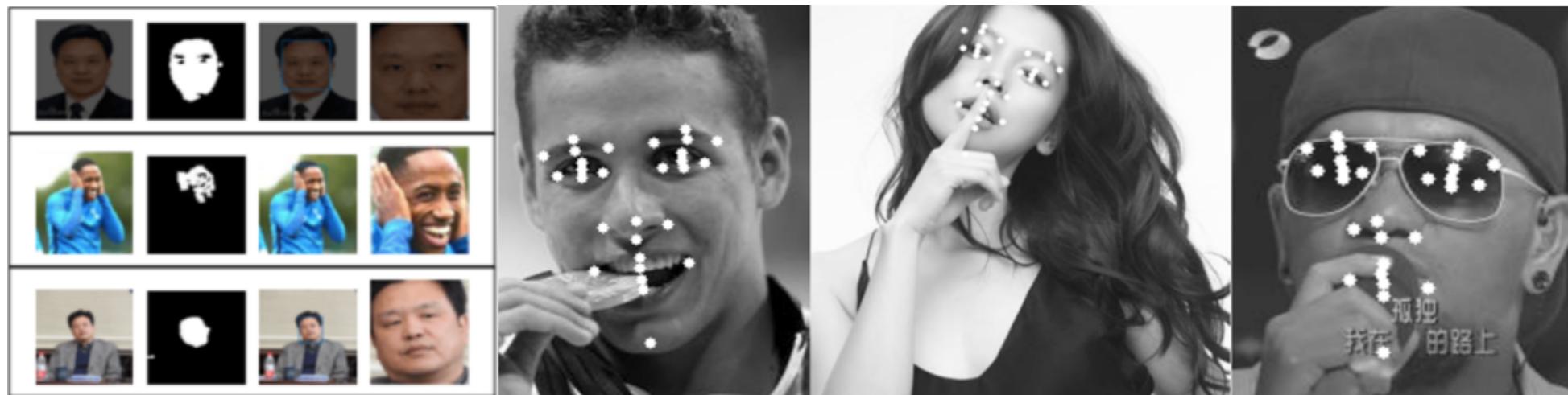
A method to perform **kinship verification** between 3 members of a family based on short **video** clips via **face recognition**.



Proposed an advanced process of face recognition for blood relationship, including extracting key frame, face detection, face alignment and feature recognition using CNN

FFVW (Familyship Face Videos in the Wild): a novel video-based face recognition database with blood relationship labels; parsed video data by family of father, mother and children from raw data with tree-structure





Behaved well in dim light

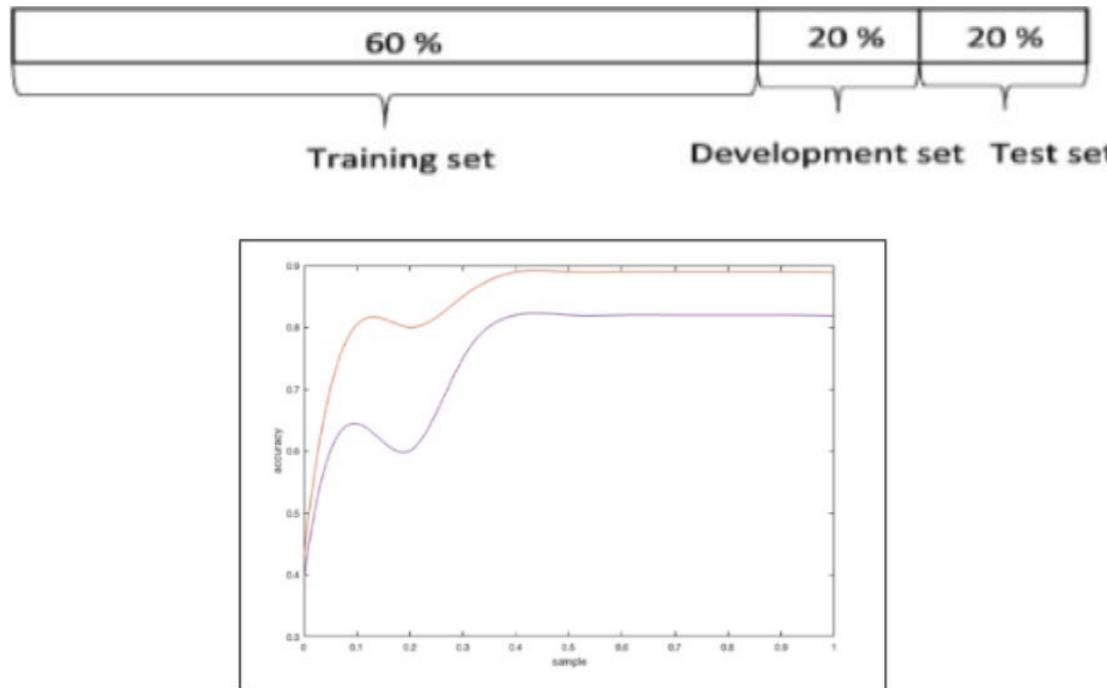


Fig. 10. ROC curve for FFVV with (blue) and without (red) normalizing the brightness of the input images.

83.06% to **89.42%**

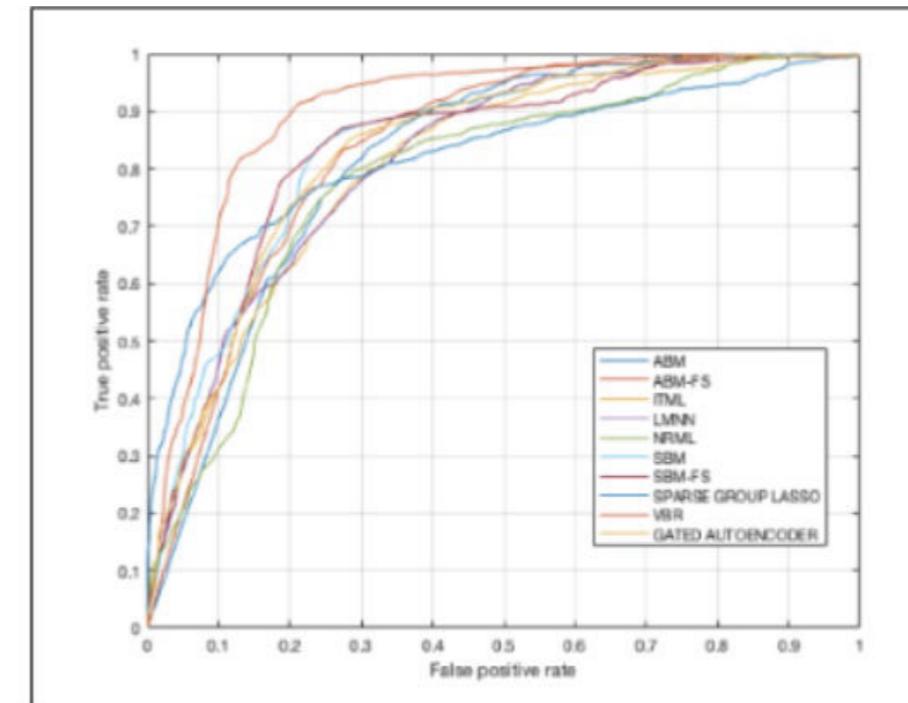


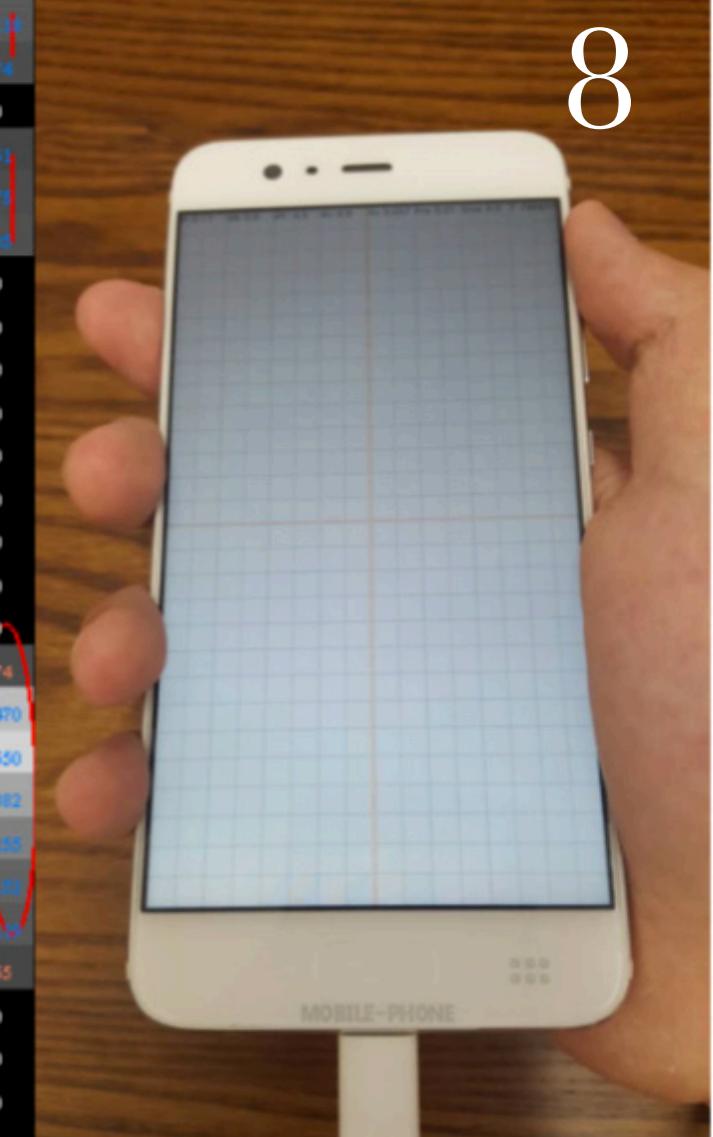
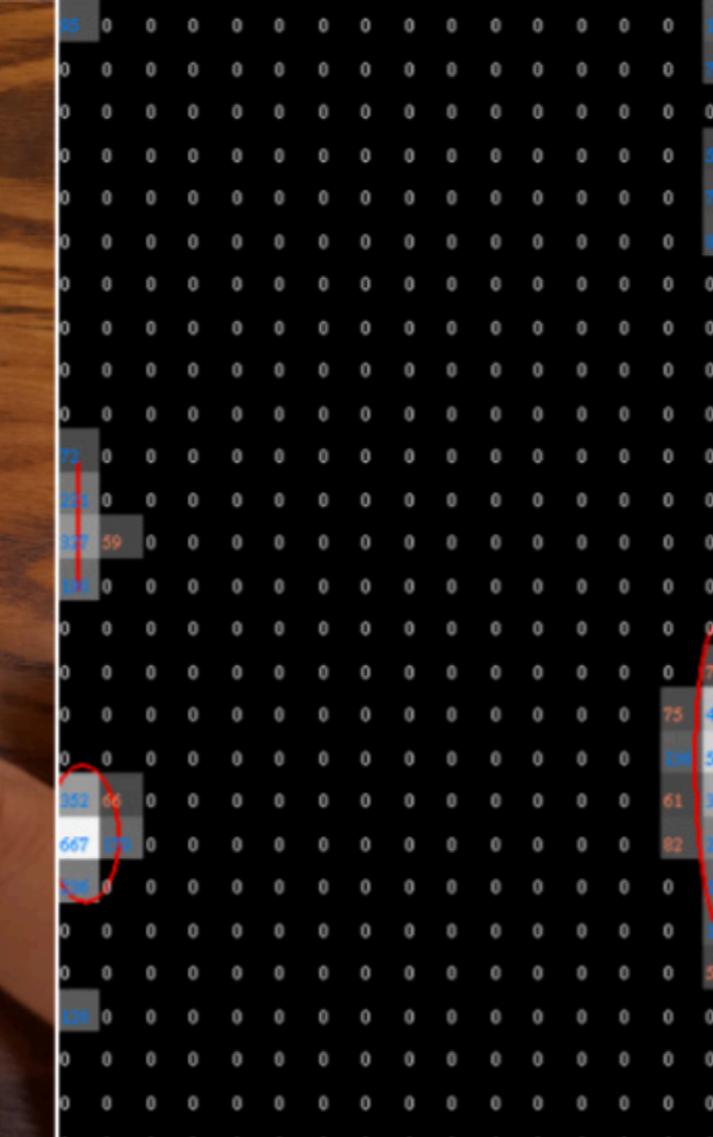
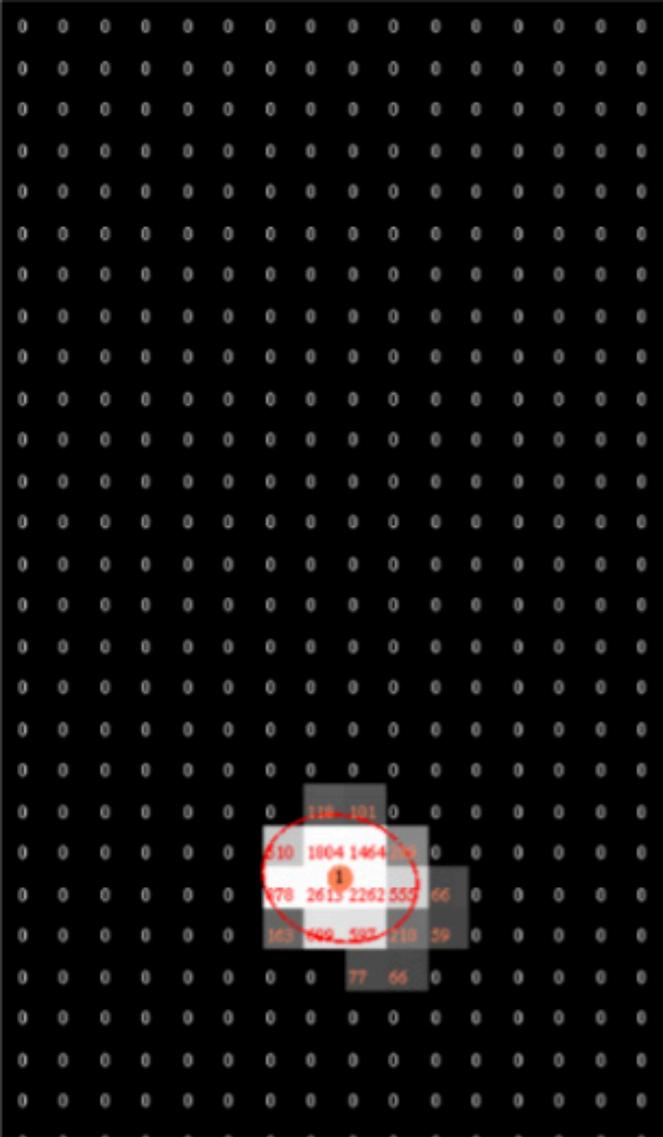
Fig. 11. ROC curve comparison of our approach to current methods.



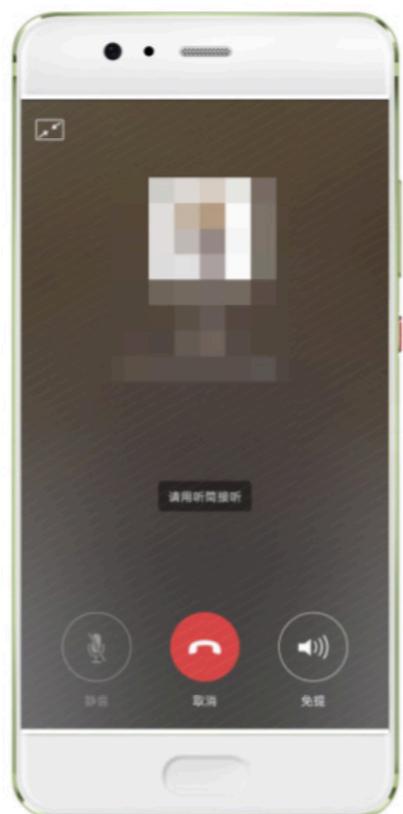
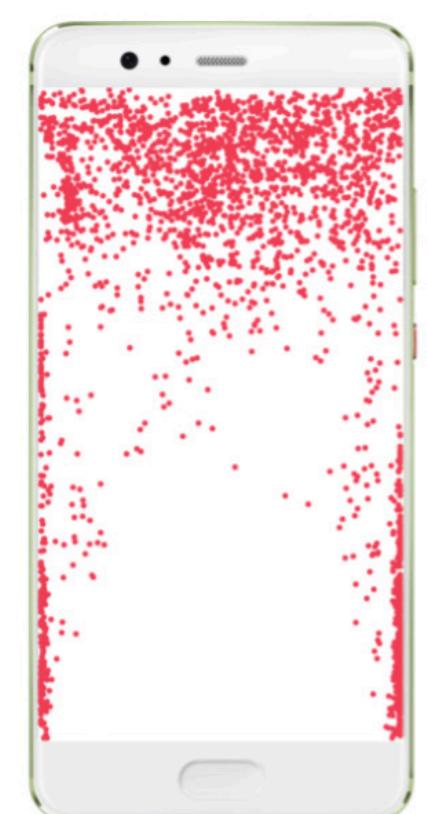
2

Heterotypic Unintentional Touch Detection

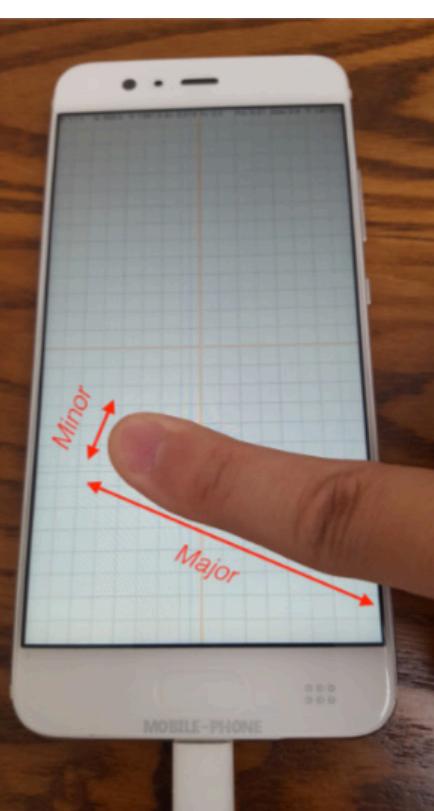
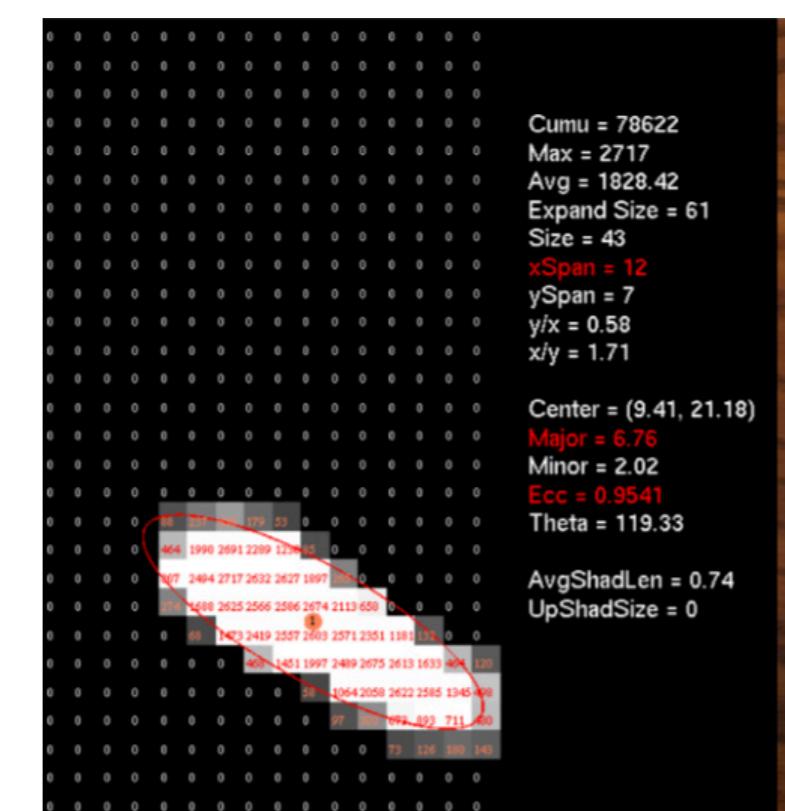
Jiachen Li (signal analysis), Yukang Yan, Yingtian Shi

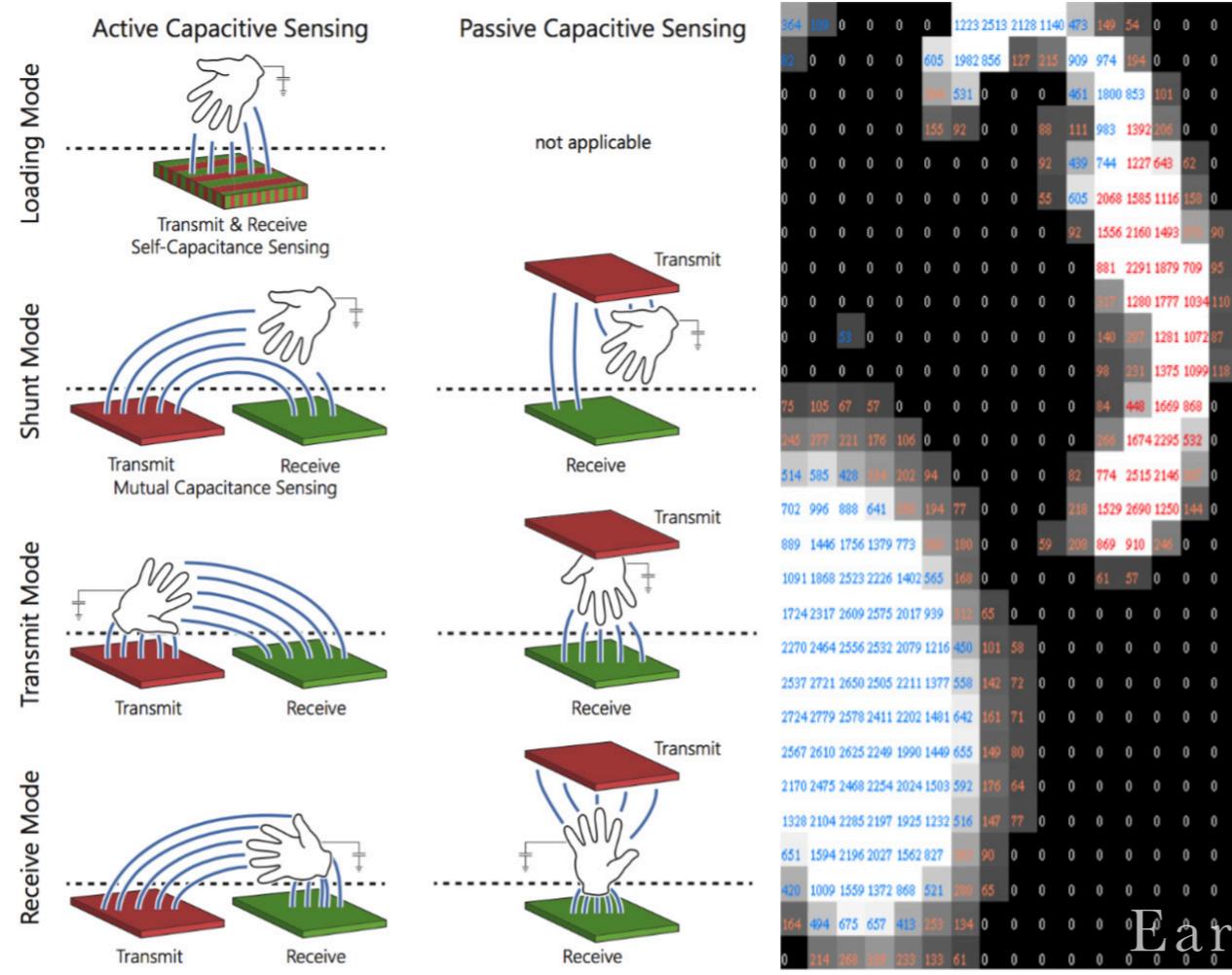


Touch & Edge Touch



Distribution of record points

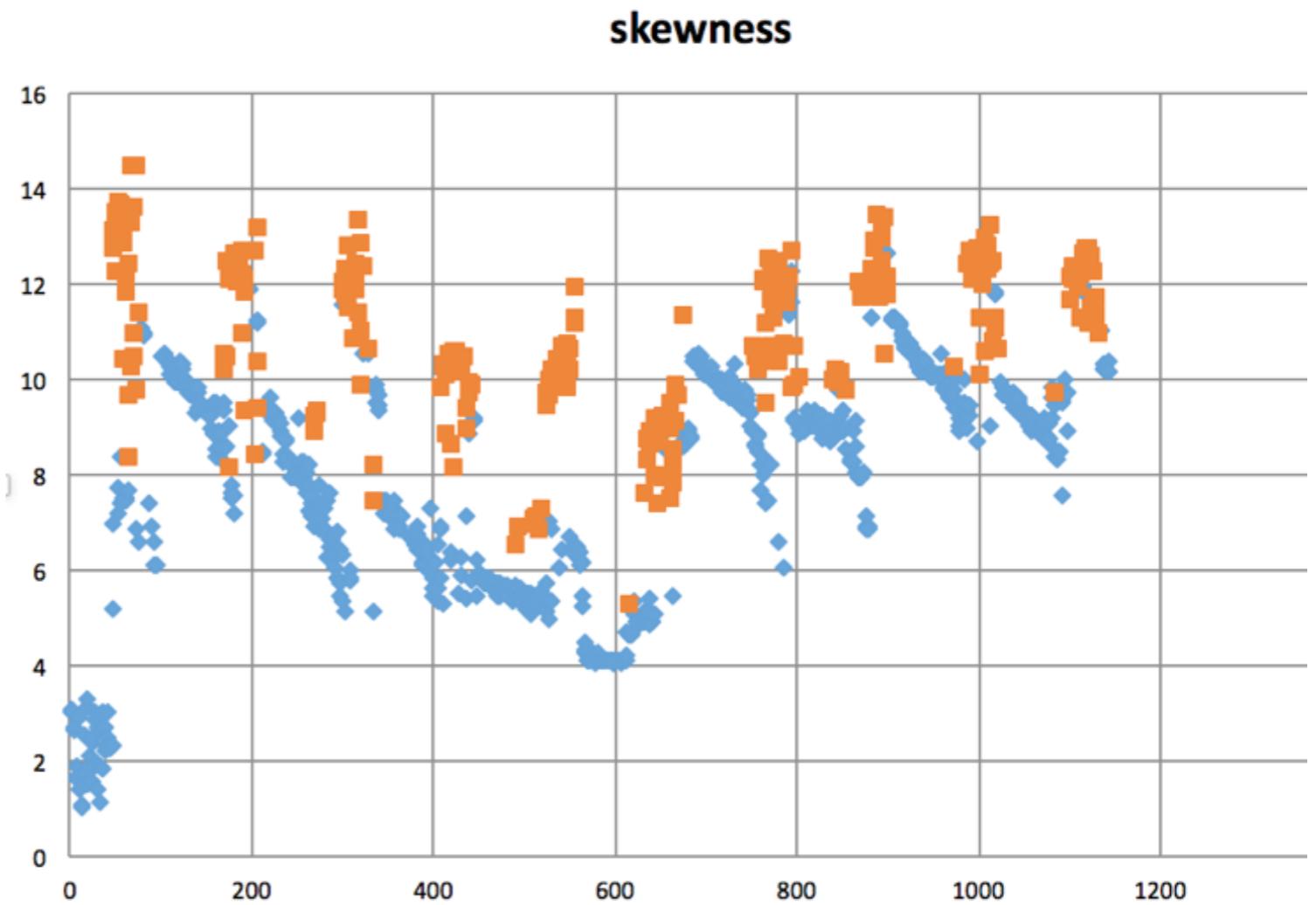




Extracted temporal sequences of the max-capacitive point in every core area; performed FFT analysis and generated the frequency spectrum; discovered disparity of spectrum distribution for intentional and unintentional touches.

Designed unintentional touch detection algorithm based on 125Hz capacitive sensing signal on phone.

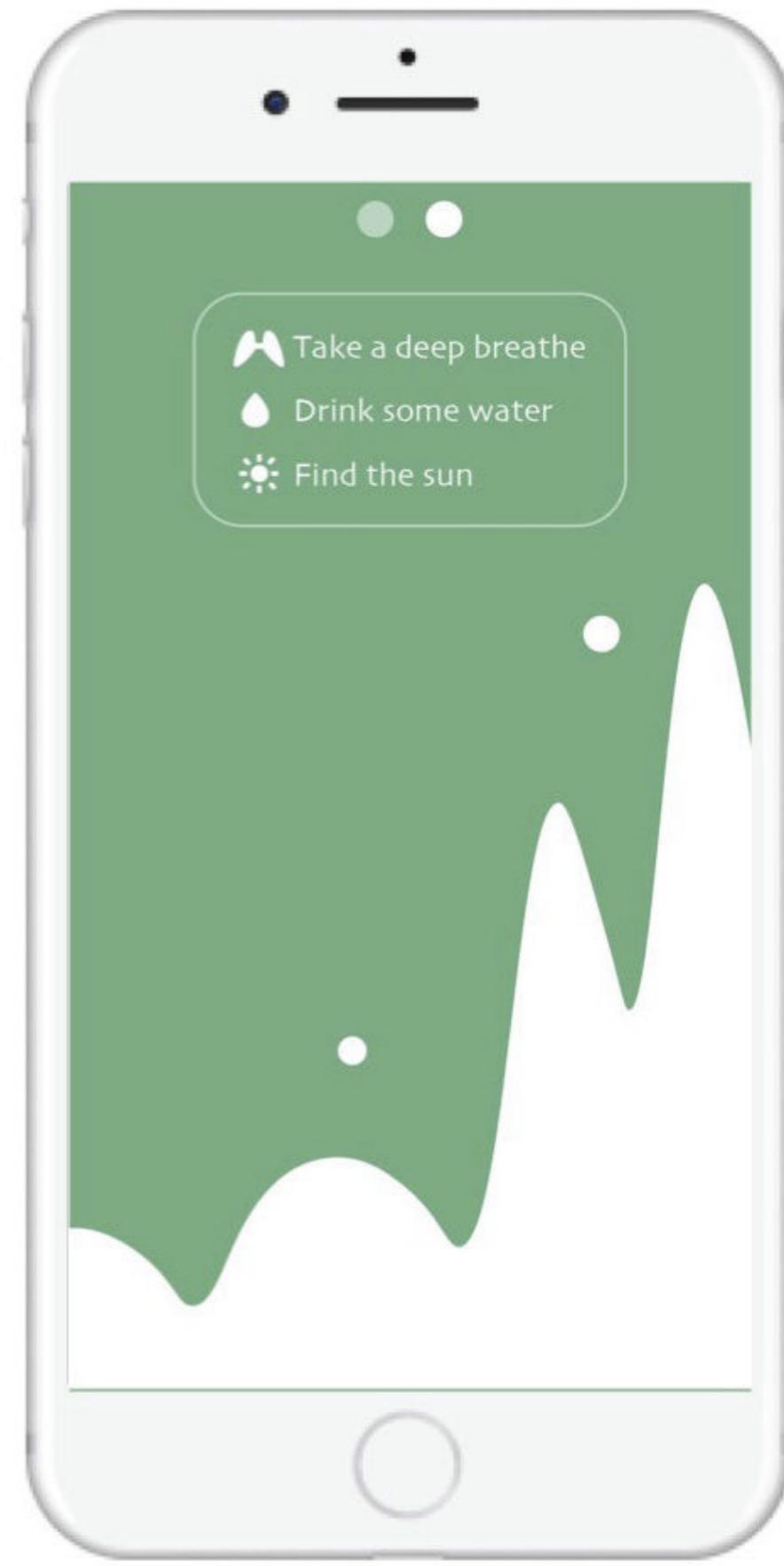
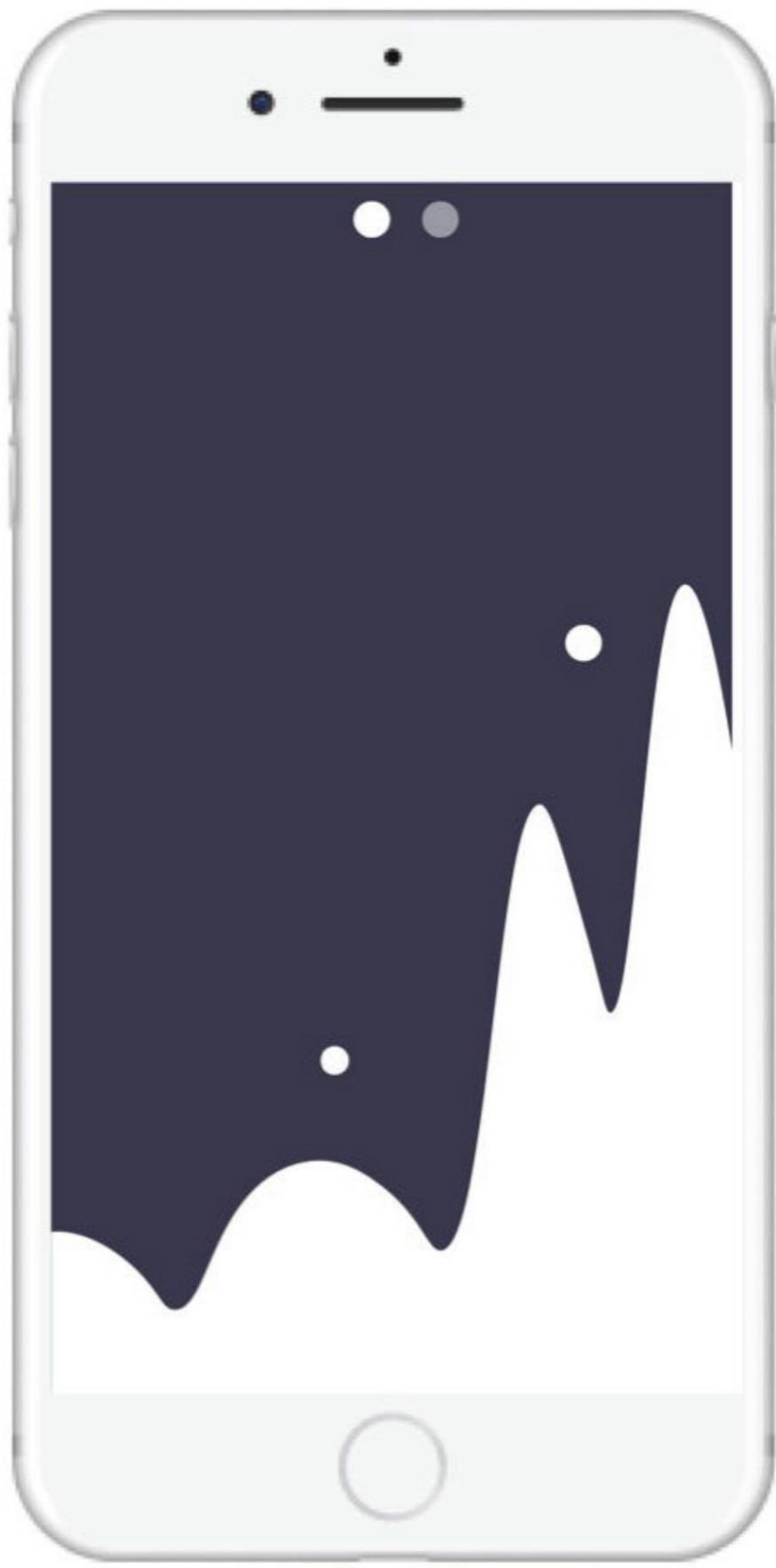
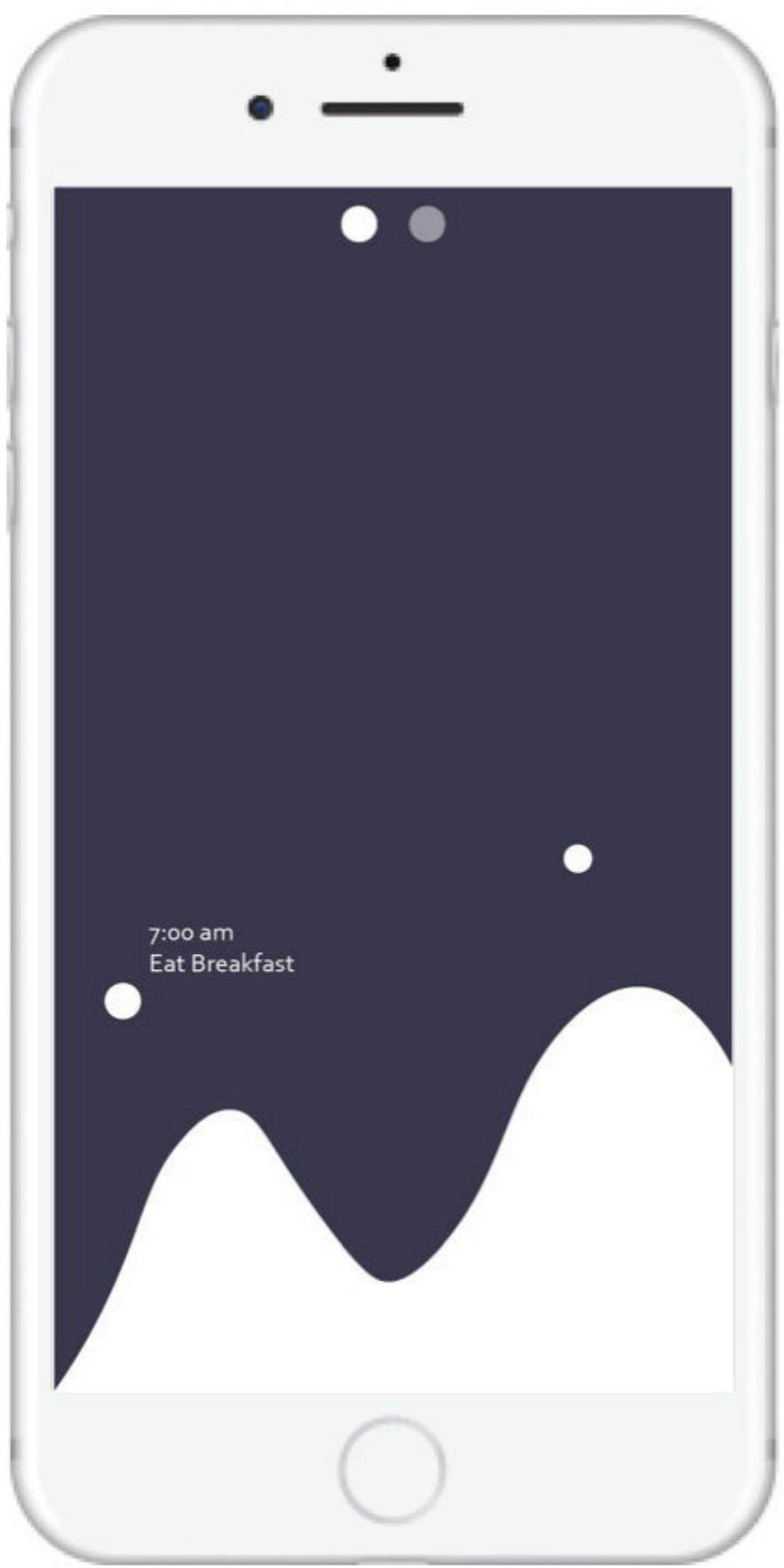
Used flood-fill algorithm and ellipse fitting techniques to detect touch, and recorded touch count and area.



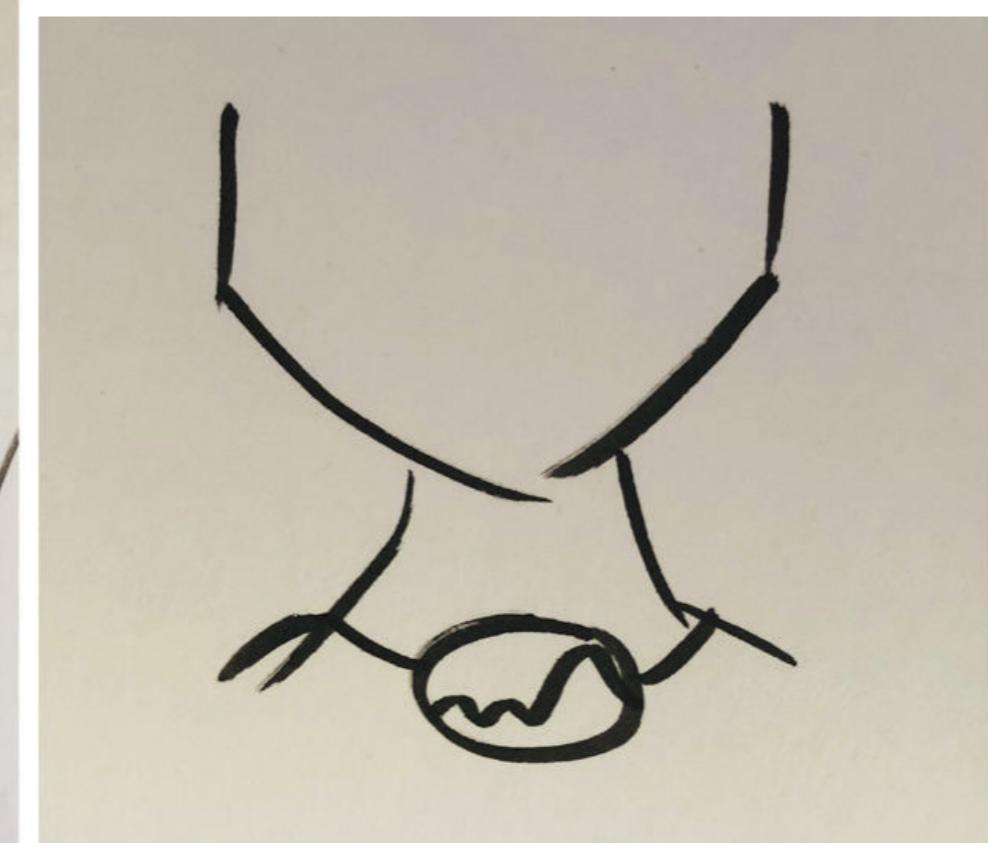
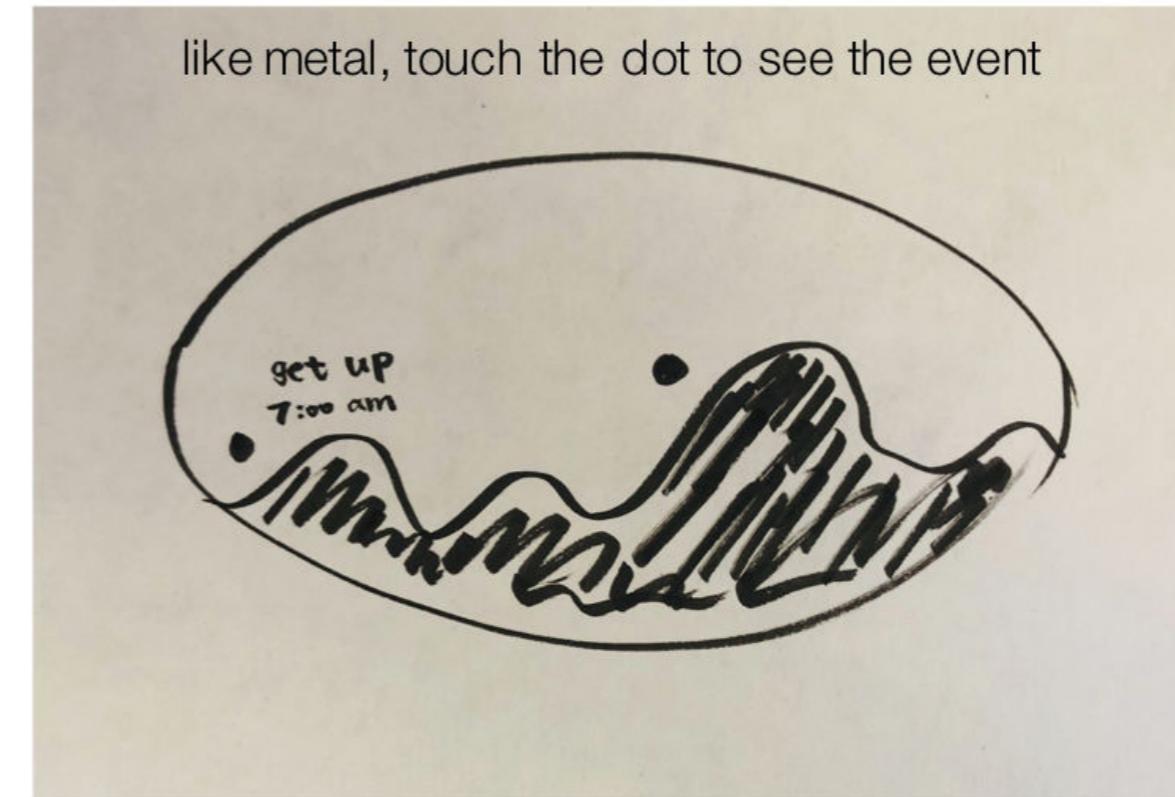


1

Stress App Design



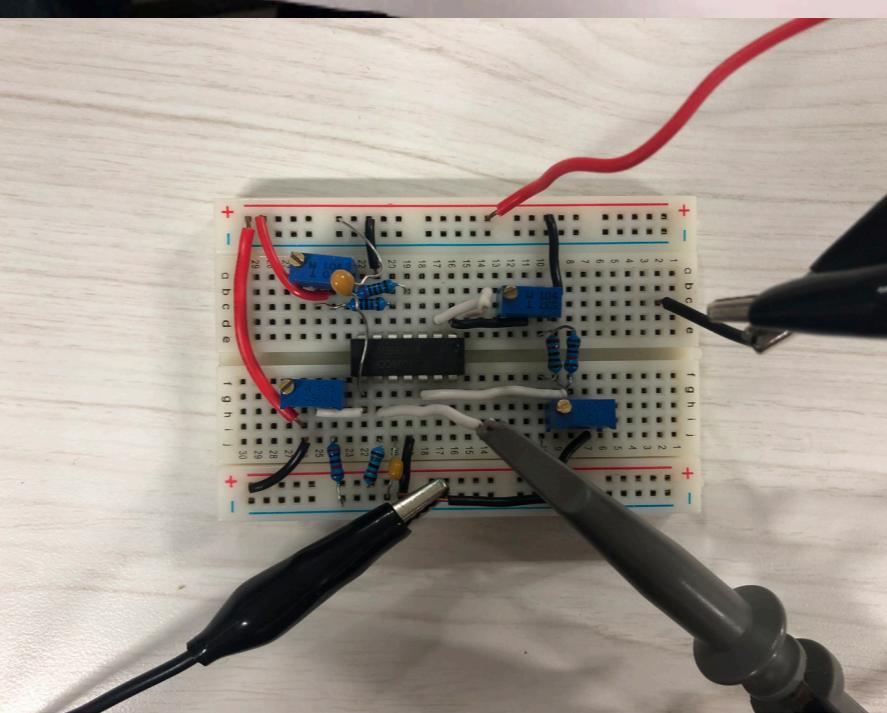
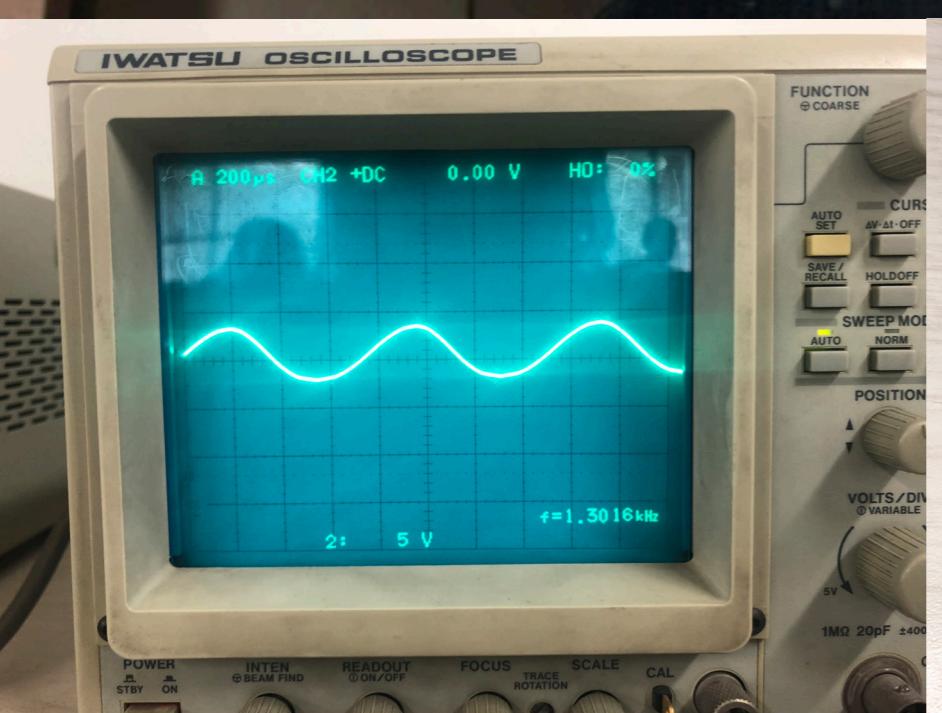
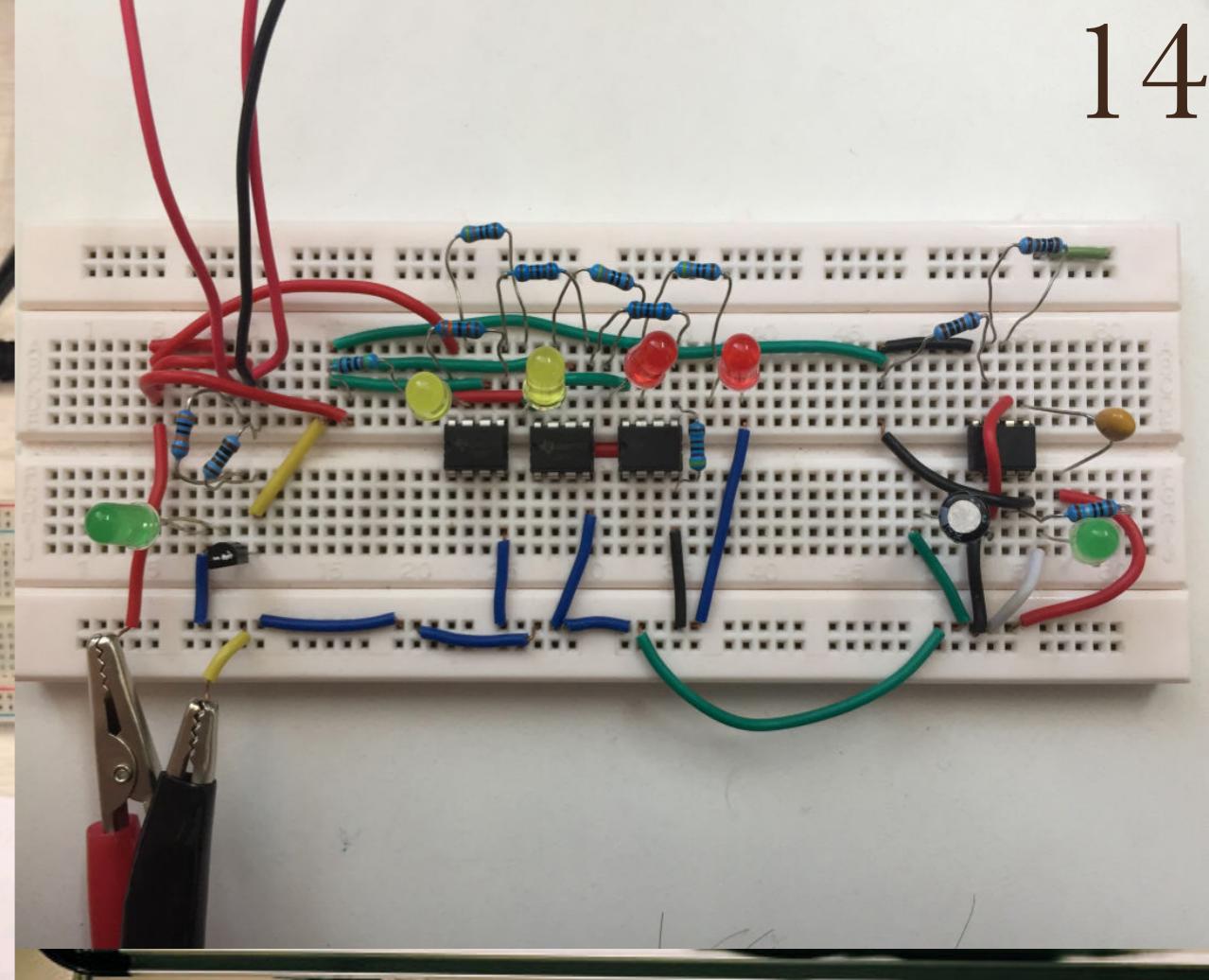
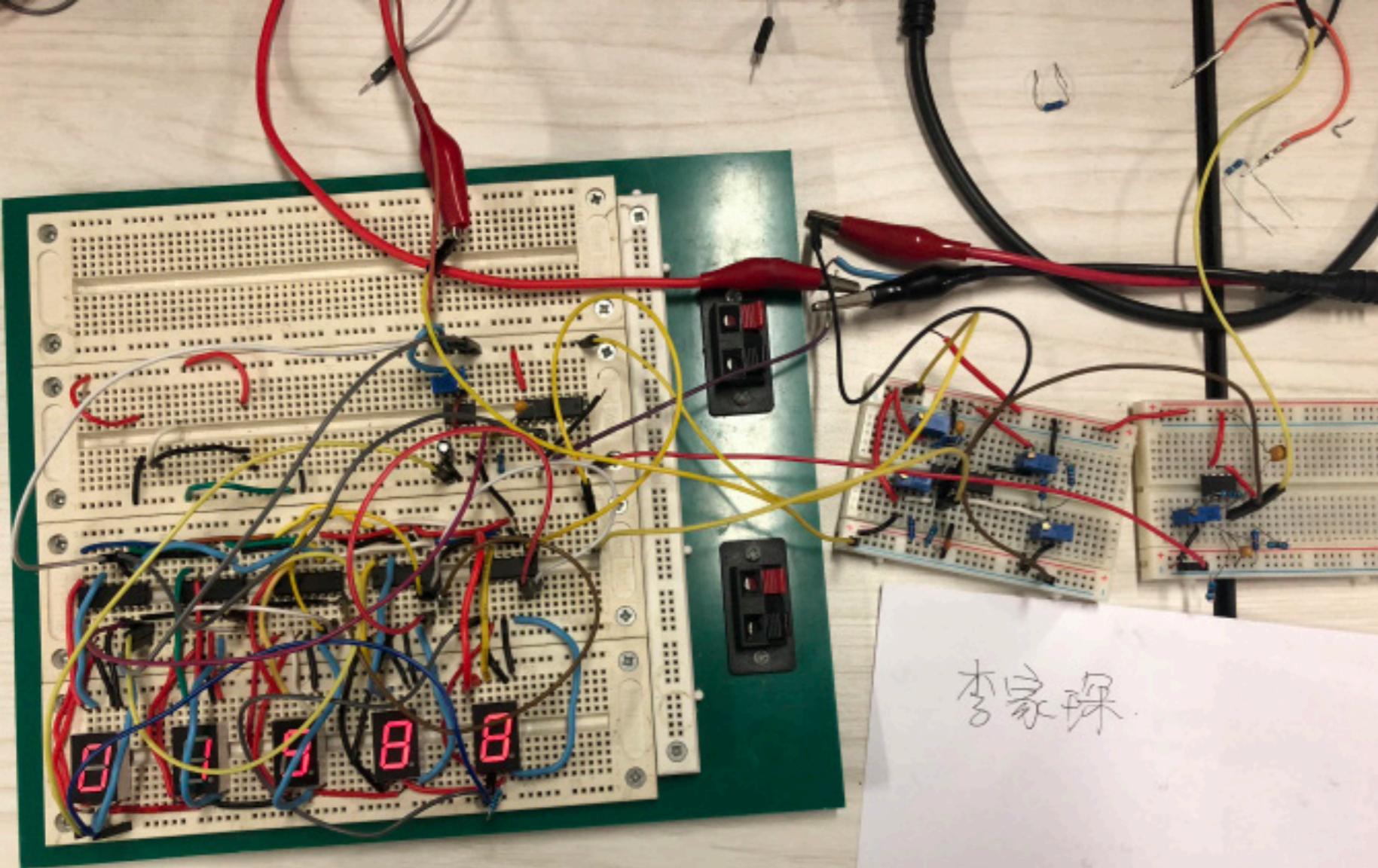
Wearable Sketches

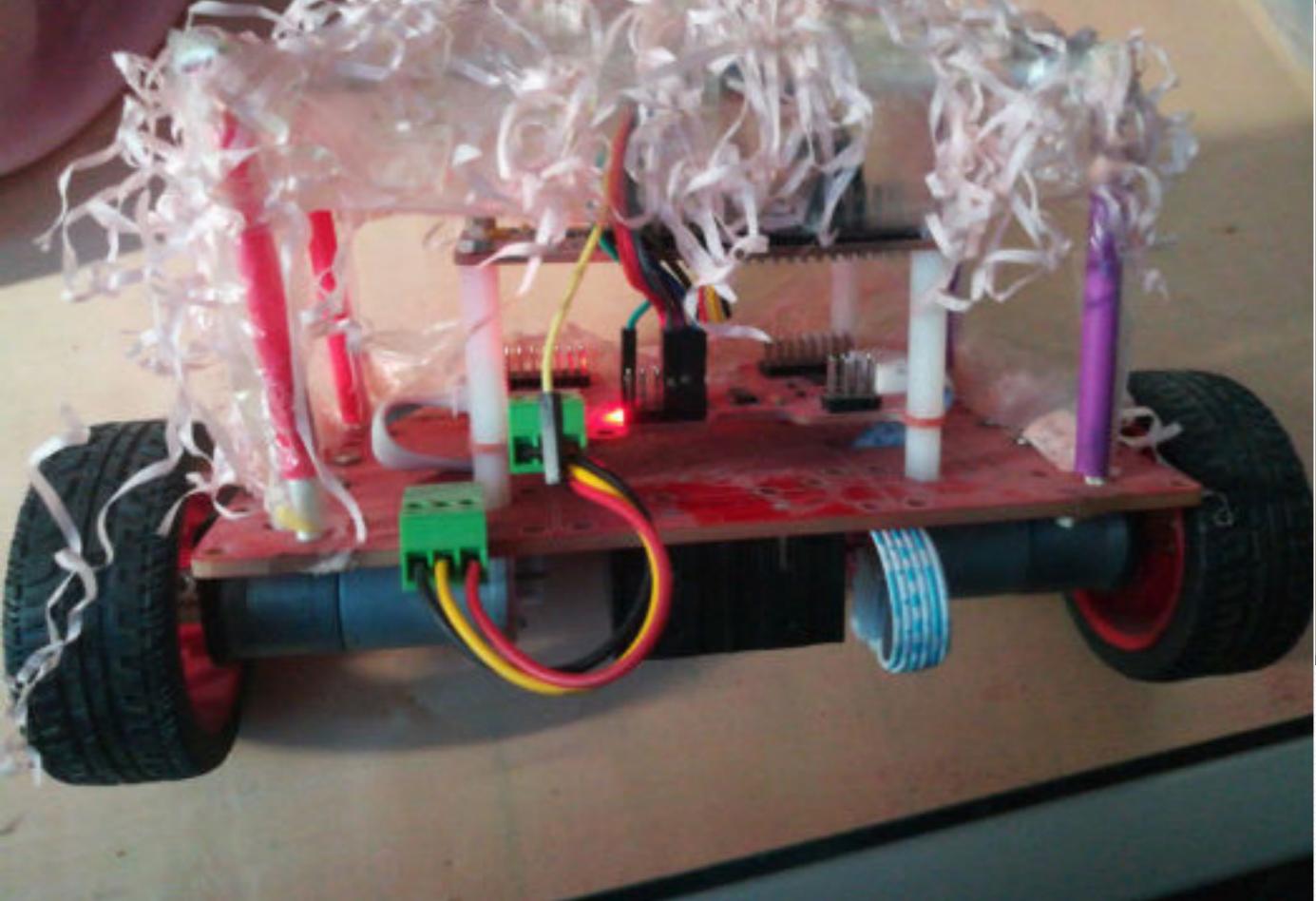




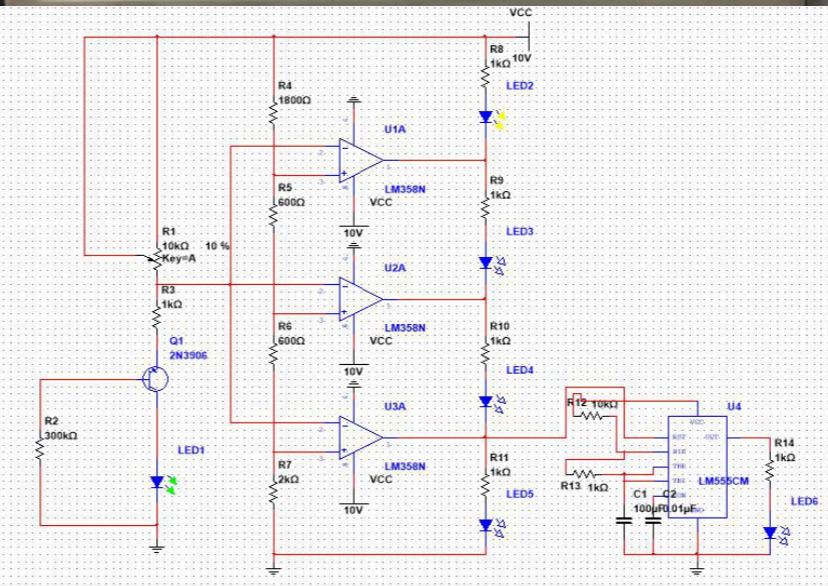
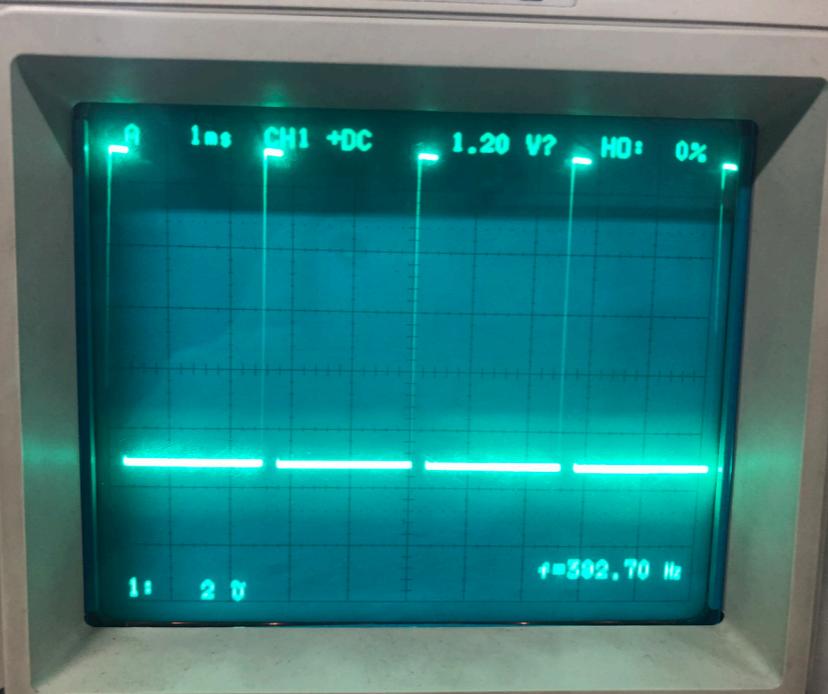
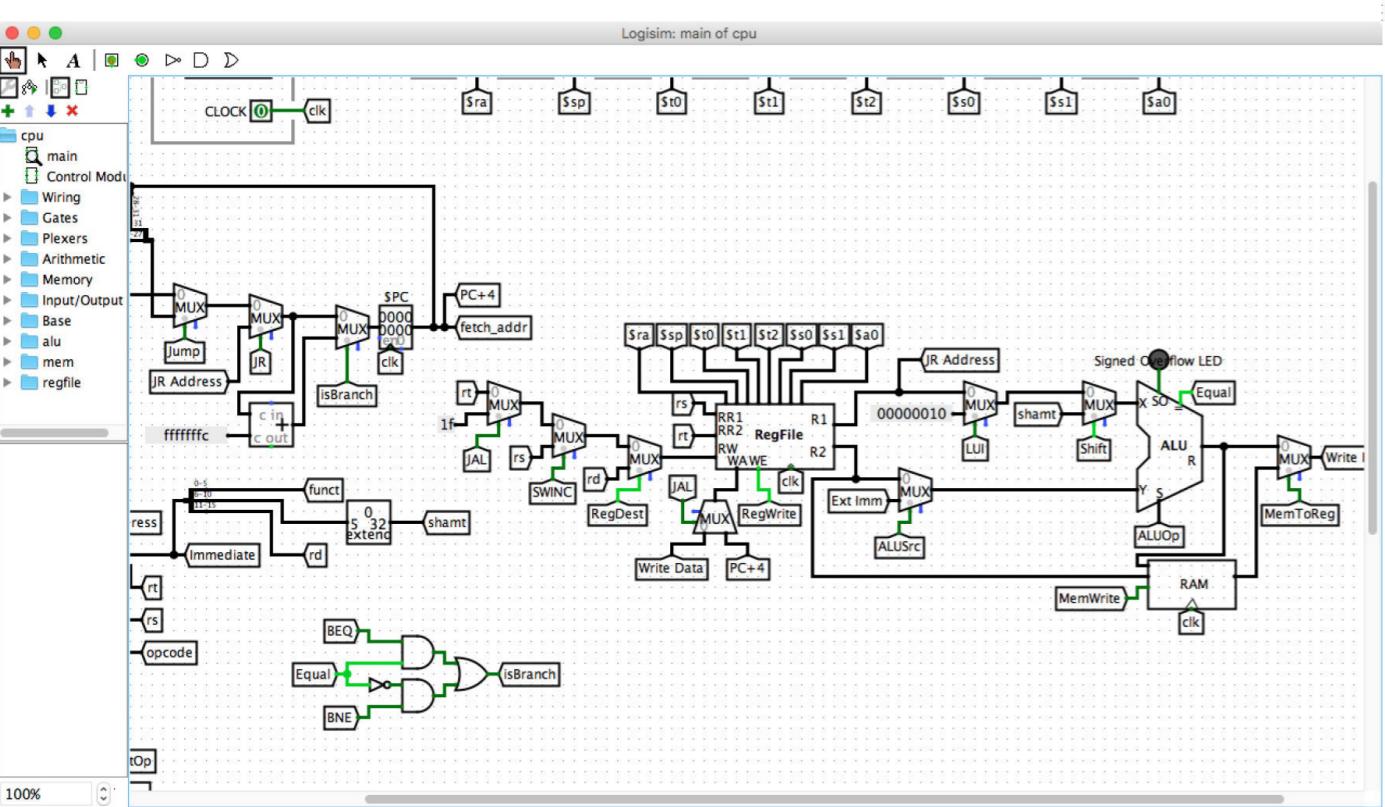
2

Digital Stuff





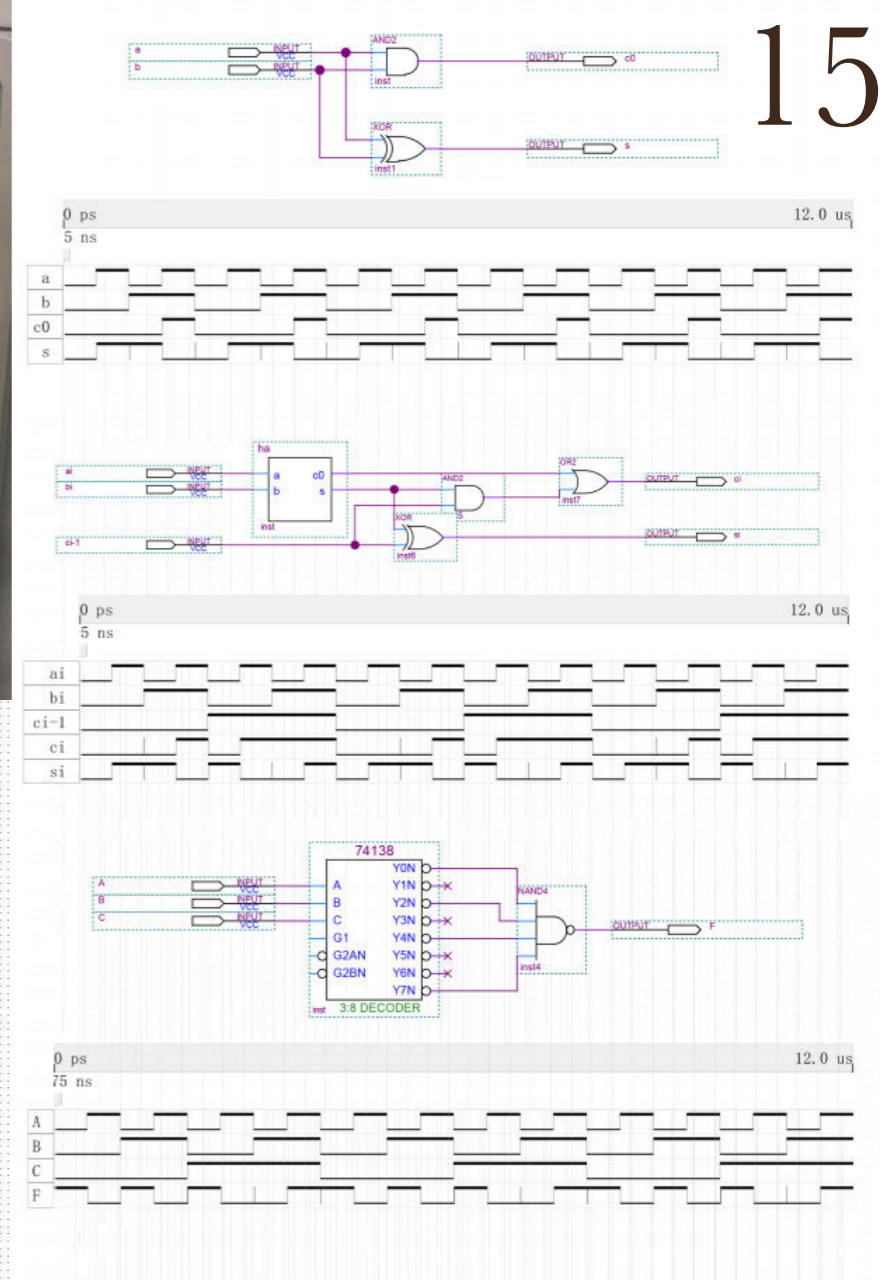
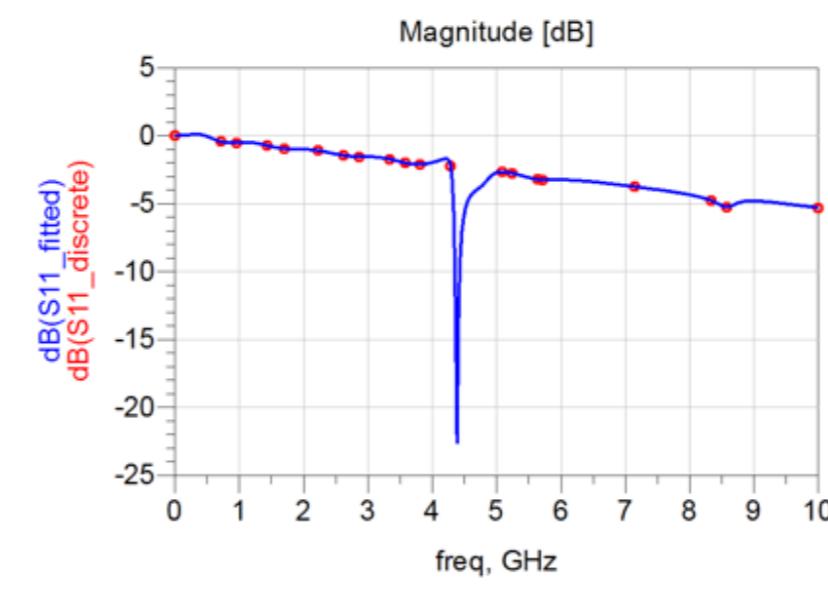
A self-balanced car



Discrete Frequencies vs. Fitted (AFS or Linear)

Adaptively Fitted Points

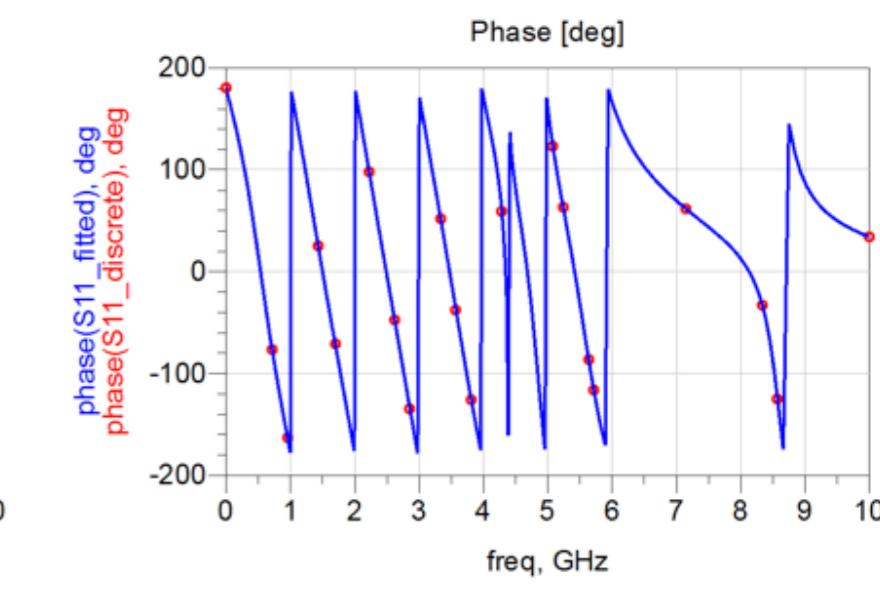
Discrete Frequency Points



Discrete Frequencies vs. Fitted (AFS or Linear)

Adaptively Fitted Points

Discrete Frequency Points

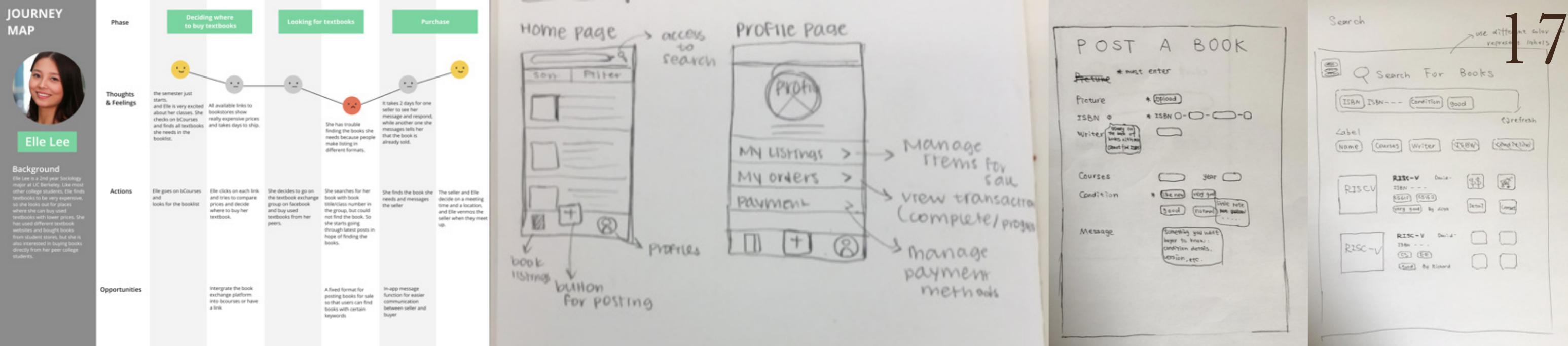




3

TextEx App Design

Jiachen Li, Miley Hu, Andrew Dildy



constraints: only VCB students use this app

sign up :

what we want to do: ① make sure he/she is VCB student

② provide some info for the convenience of next step ③

Sign up → ③ post books → ④ wait → ⑤ someone buys

info: essential: ① real name

② email → berkeley.edu

③ user name (in case for the same name)

prefer: ① grade

② department/related department

③ courses

④ contact info: phone,

⑤ other

seller

④ decide where & when to put books into lockers online
↓
⑤ put the books into lockers

post books / search for books

what should we do: post: connect books with other info: courses, etc.
verify the info: condition ...

search: use minimum words to get the correct result

platform: provide a worldwide standard of books (condition, price)
give both seller and buyer enough flexibility

key word: name, ISBN, writer, version courses, condition, picture

post: essential: name (include version), ISBN, picture, condition
prefer: courses, writer, message (explain the condition, etc.)

search: use all the key words to get the correct book

SURVEY of THIS PART :

① survey we should do: ① kinds of condition & their standard & prices (ef. very good 50%)
(collect info on the web) ② numbers of steps ③ each website use to get the correct book
④ graphic design principle: layout, color, ...

Some sketches

buyer

① sign up → ② search for books → ③ choose & buy → ④ decide where & when to pick up
↓
⑤ pick up

sign in :

what we should do: ① easy for users to sign in (especially when forgot password)
② difficult for others to sign in

result: everything based on email!

info: user name / email + password

use email to get password if forgot

② survey on users: ① imagine you are the buyer ...

1° keyword: which do you like to search for books?

2° condition: ← if What do you think is a 'good' book?
How much do you think should a 'good' book be?

3° price: prefer price decided by platform/seller?

choose a grade and the price will be decided by the grade

ef. All 'good' book is 50% of original price

TextEx

The collage illustrates the TextEx app's interface across different screens:

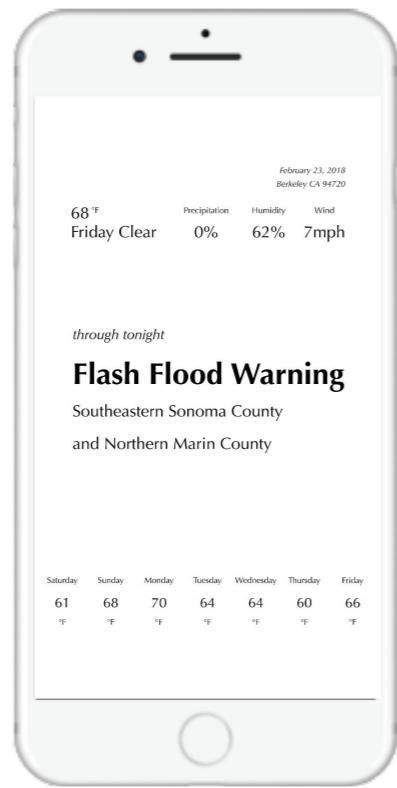
- Top Left:** A search bar with "University of California, Berkeley (Reg) >" and a blue lock icon.
- Top Center:** "My Books" tab selected in the navigation bar. It shows a "FOR SALE" section with a book listing for "Macroeconomics - 8th Edition" by Abel, Bernanke, and Croushore, priced at \$23.12, in Like New condition, for Econ 100B. An "Edit detail >" button is present.
- Top Right:** "Favorites" tab selected. It shows a profile for "Daniel Smith" with a circular photo of a man in a suit.
- Middle Left:** "CalNet Authentication Service" screen with fields for "CalNet ID:" and "Passphrase (Case Sensitive)". Buttons for "SIGN IN", "HELP", and "Sign In with" (MAP@Berkeley ID).
- Middle Center:** "IN USE" section showing "Microeconomics - 4th Edition" by Paul Krugman and Robin Wells, and "Calculus - 8th Edition" by James Stewart.
- Middle Right:** A messaging screen with a message from "Ashley" asking for more book photos, a response from "Daniel Smith" saying "Sure! Give me a minute.", and a reply from "Ashley" saying "Awesome. Thank you!".
- Bottom Left:** A search interface with a "Title" dropdown, a search bar with "Search" button, and a keyboard.
- Bottom Center:** A detailed book listing for "Calculus (Multivariable) - 2nd Edition" by Jon Rogawski. It includes the book cover, price (\$41.71), condition (Very Good), courses (Math 53, Math 110), and a "View detail >" button. Below this are sections for "Condition" (Very Good), "Courses" (Math 53, Math 110), and "Pricing" (\$41.71, 3% less than average). Buttons for "BUY NOW" and "MESSAGE" are at the bottom.
- Bottom Right:** A "Detail" screen for "Calculus - 8th Edition" by James Stewart. It shows a placeholder for a cover photo, the title, author, ISBN, and type. A "Tap to add your cover photo" button is present. Below it is a "Add more photos" section with a "Add up to 5 photos" button and a "Condition" section with radio buttons for "Like New", "Very Good", "Good", and "Acceptable". A note says "Seemingly untouched and in perfect condition. Absolutely no signs of wear." At the bottom are "Pricing" (\$23.52, Suggested Price) and "LIST" and "SAVE" buttons.
- Bottom Center:** A camera viewfinder with a green circular overlay containing the Textbook.com logo and "We Buy Books." text. A note says "Center viewfinder over bar code".

A photograph of a large tree trunk in a park. Sunlight streams through the surrounding trees, creating bright rays and lens flare. The ground is covered in grass and fallen leaves.

4

Weather App Design

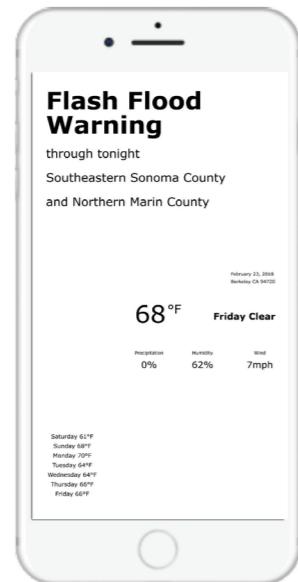
Safe & Efficient



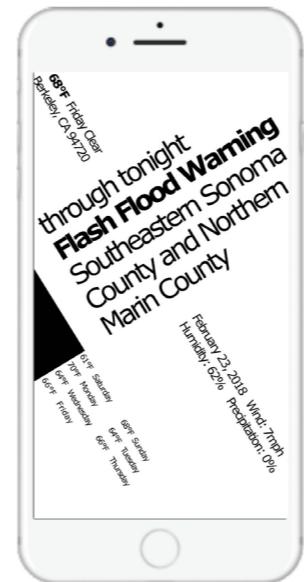
Fierce & Dynamic



Safe & Efficient



Fierce & Dynamic



Fierce & Dynamic



A close-up photograph of lavender flowers in a field, showing dense purple spikes.

5

A blurred photograph of lavender flowers in a field, creating a soft, dreamlike effect.

Interesting Application

Race car game

Unity



BMI calculator

9:15 PM

iOS

40

kg

体重

170

cm

身高

70

cm

腰围

1

女0 男1

性别

消息显示区

Server: kk
Server: New connection from localhost.....
kk: kjhv
Server: New connection from localhost.....
op: pppppppp

Conference room

Java



Test your calculation

Number of Exercises:

Correct:

Exercise:

Java

Wrong:

Answer:

Time:

Result:

START

NEXT

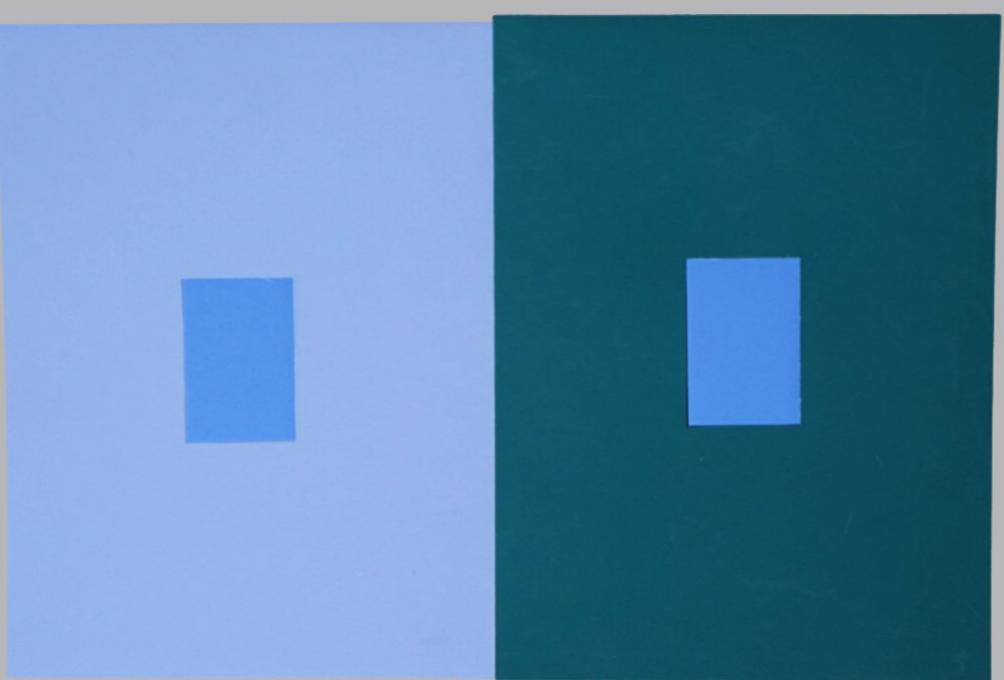
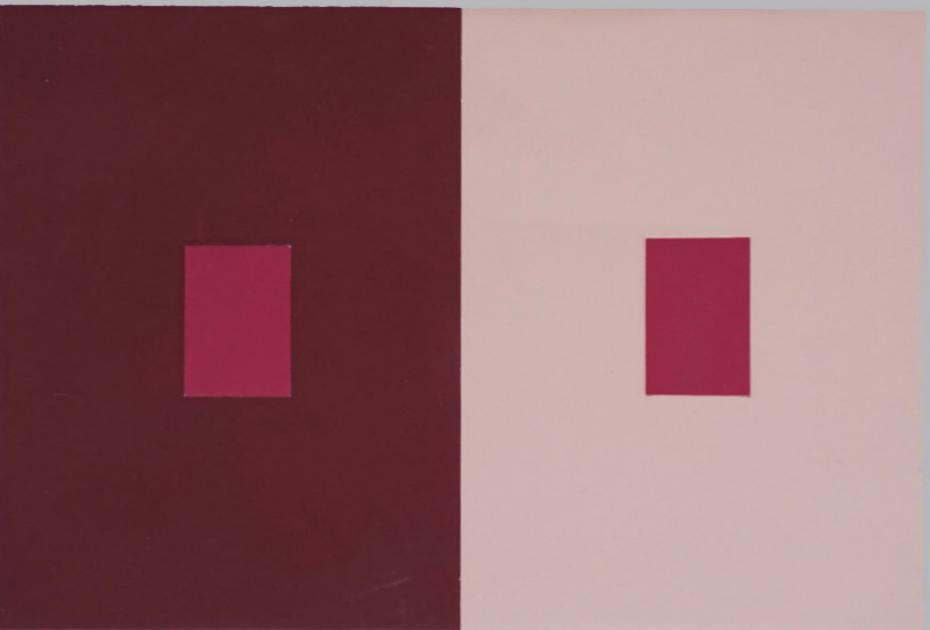
EXIT

1. Input how many exercises you want to complete and press START on the screen
2. Enter the answer and press ENTER on the keyboard
3. View if you're correct and press NEXT and START on the screen
4. Repeat until you've finished the test
5. Press EXIT on the screen at any time to exit the test
6. Round to 2 decimals place

The image is a vertical split composition. The left half shows a city skyline at dusk or dawn, with various buildings and cranes silhouetted against a sky filled with warm, golden-yellow clouds. The right half is a solid black rectangle.

6

Some Craft



A close-up photograph of a cockatoo's head, showing its white feathers, yellow patch around the eye, and a large, hooked beak.

7

Personal Website

file:///private/var/folders/14/yxfg7vr16vndk_5fpc11_glh0000gn/T/Mobirise2018111_131456/20181201_154508/index.html

file:///private/var/folders/14/yxfg7vr16vndk_5fpc11_glh0000gn/T/Mobirise2018111_131456/20181201_154508/index.html

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PROJECT

file:///private/var/folders/14/yxfg7vr16vndk_5fpc11_glh0000gn/T/Mobirise201811_131456/20181201_154508/page3.html (2017-2018)

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Photography

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moving forward, turning left/right and stopping.

blood relationship labels.

Proposed an advanced process of face recognition for blood relationship.

[Learn More](#)

[Learn More](#)

[Learn More](#)

file:///private/var/folders/14/yxfg7vr16vndk_5fpc11_glh0000gn/T/Mobirise201811_131456/20181201_154508/page6.html

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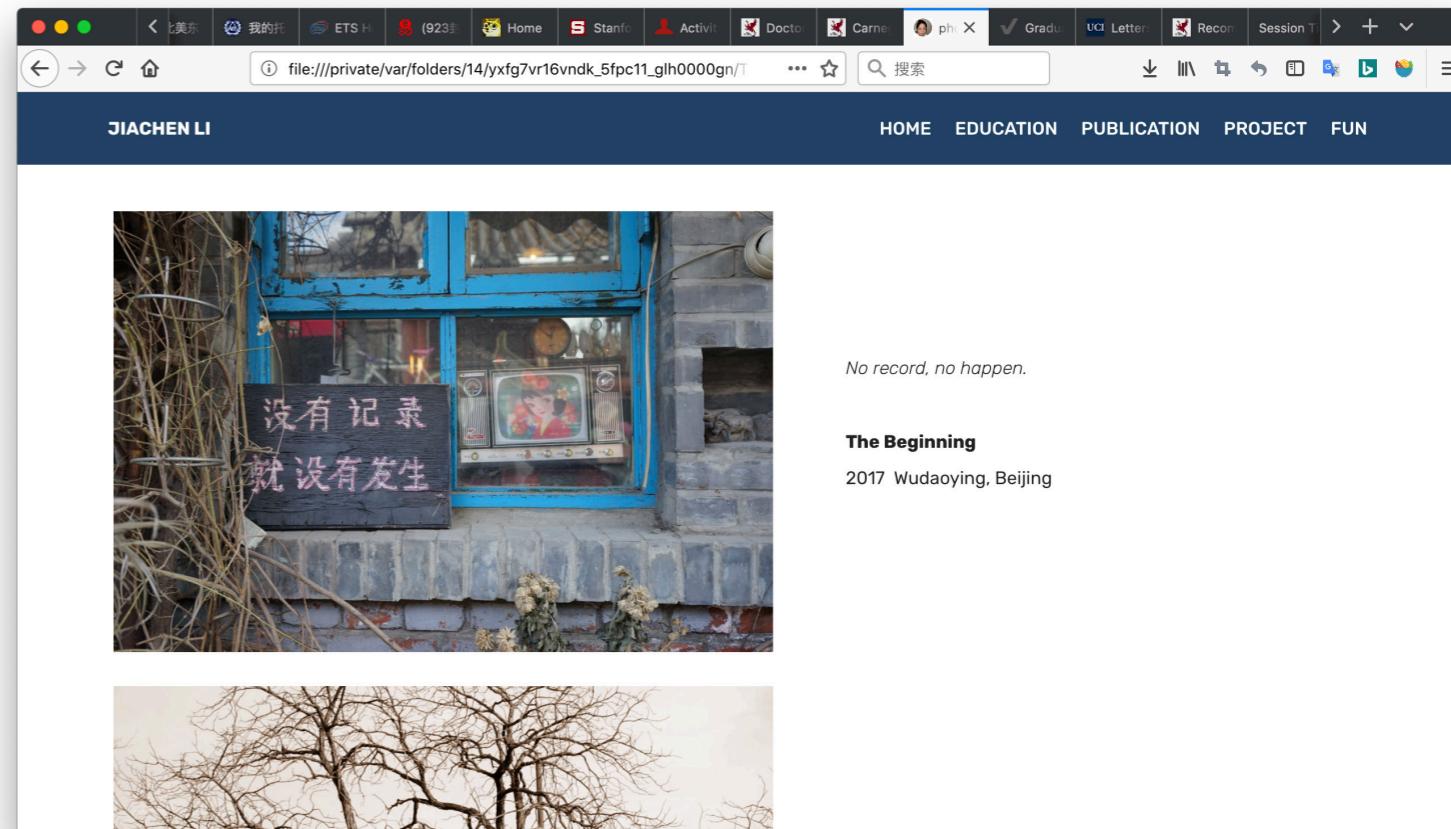
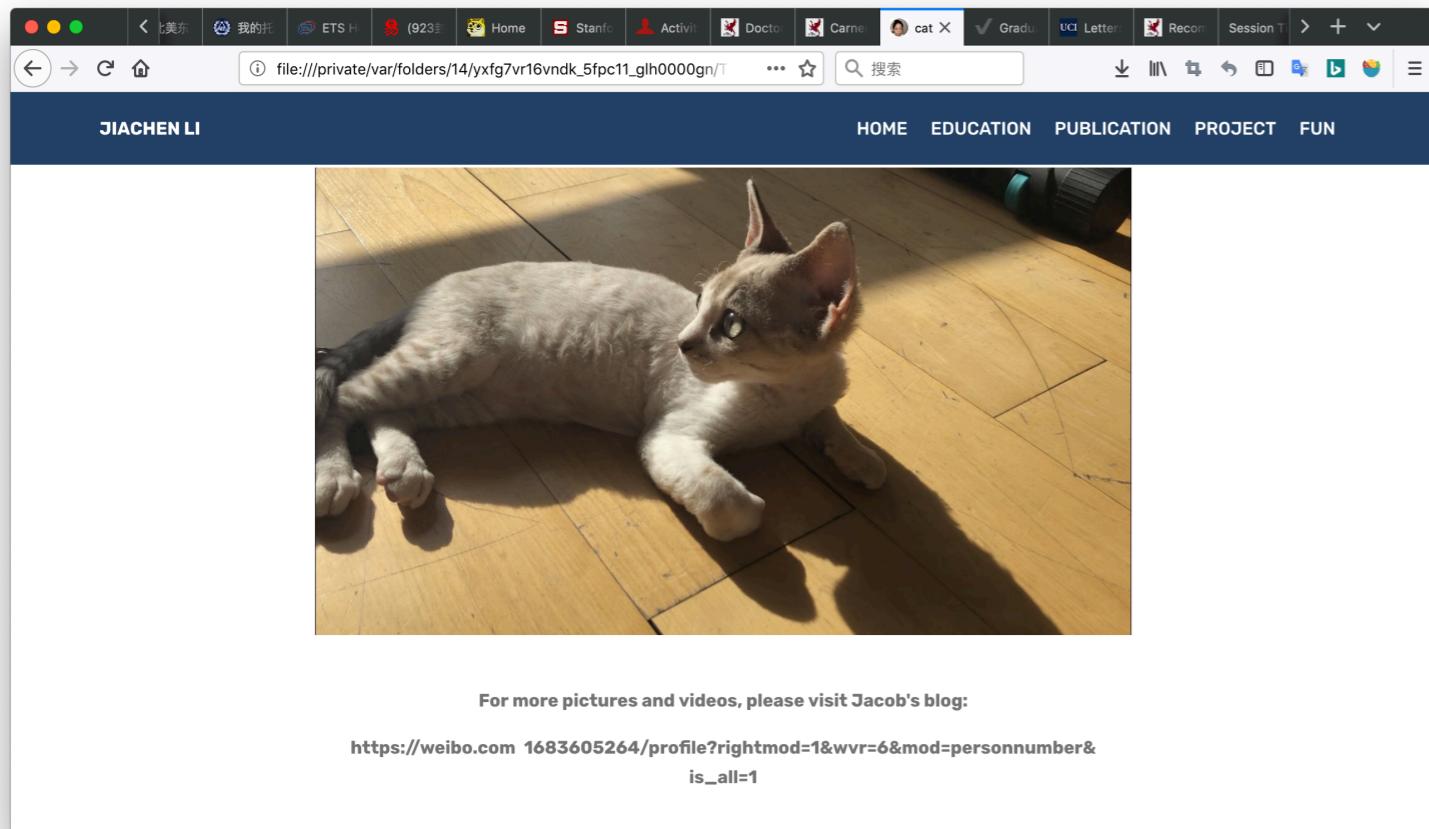
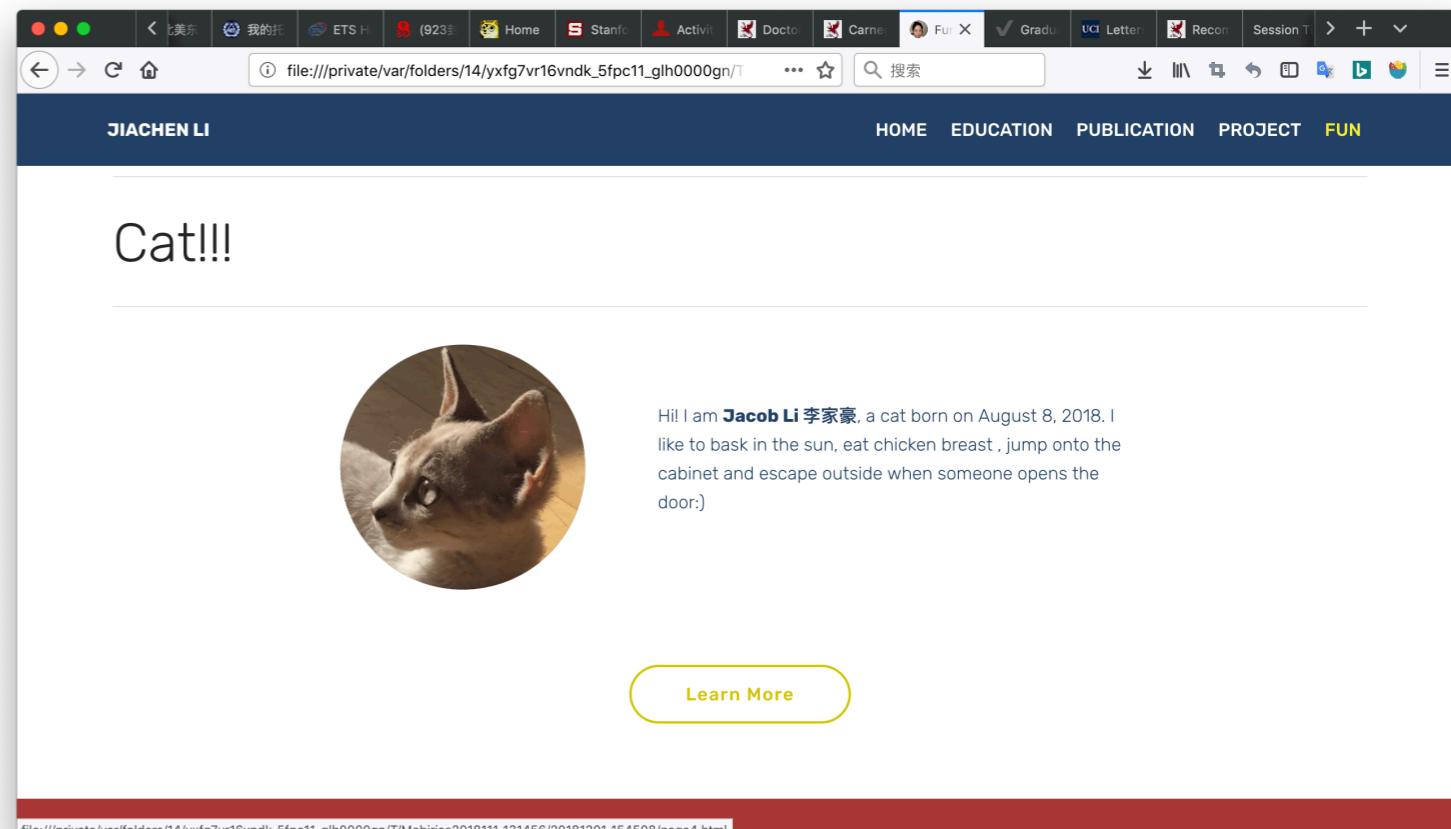
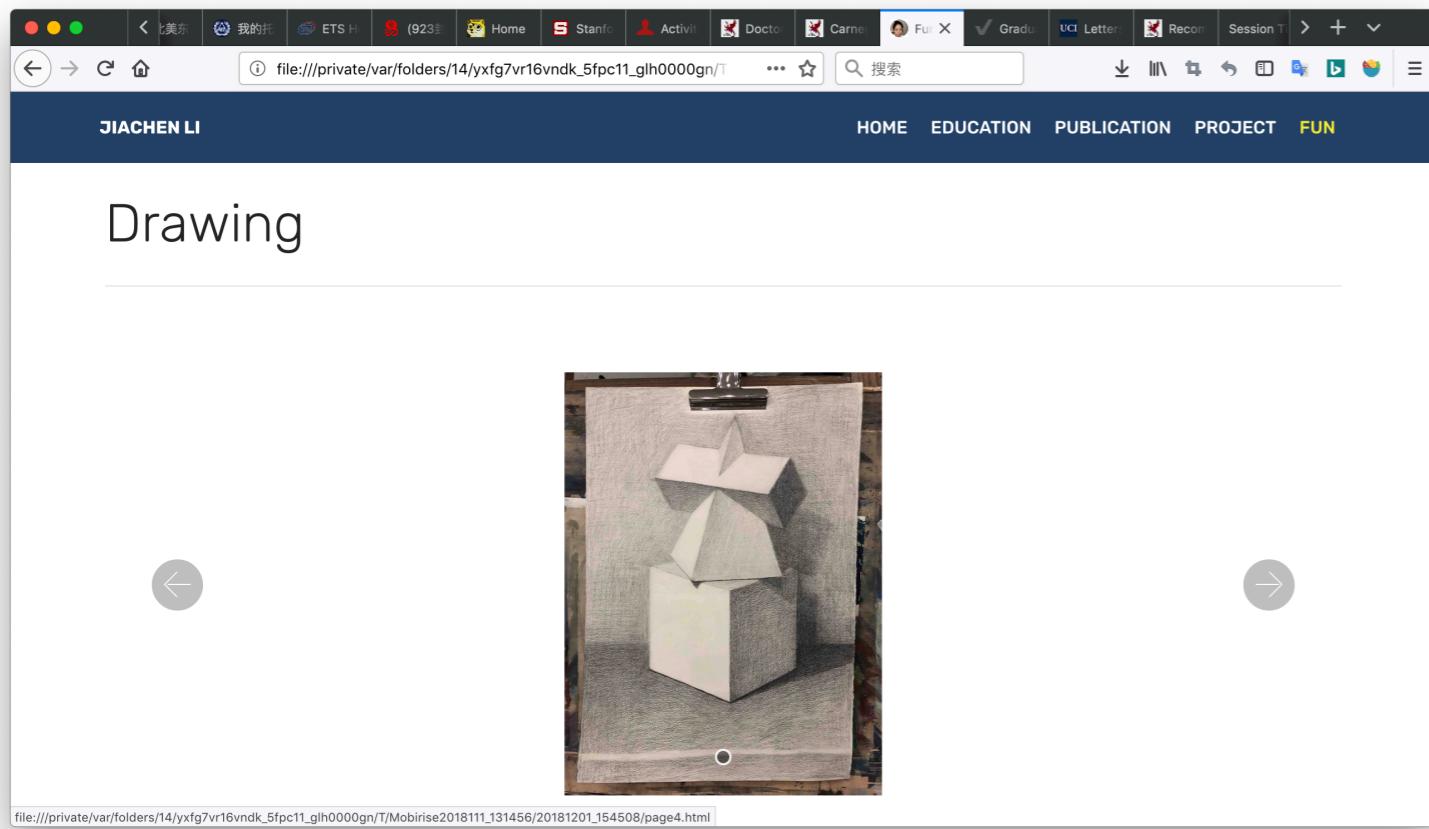
Mom is kissing the fish. Glass disappears.

Woman and fish

2017 A museum in Dubai Mall

Loving the beautiful sunshine in Berkeley. Loving you.

file:///private/var/folders/14/yxfg7vr16vndk_5fpc11_glh0000gn/T/Mobirise201811_131456/20181201_154508/page4.html





END

Thank you very much!

Jiachen Li

jasmine.jiachenli@gmail.com

www.jiachen-li.com