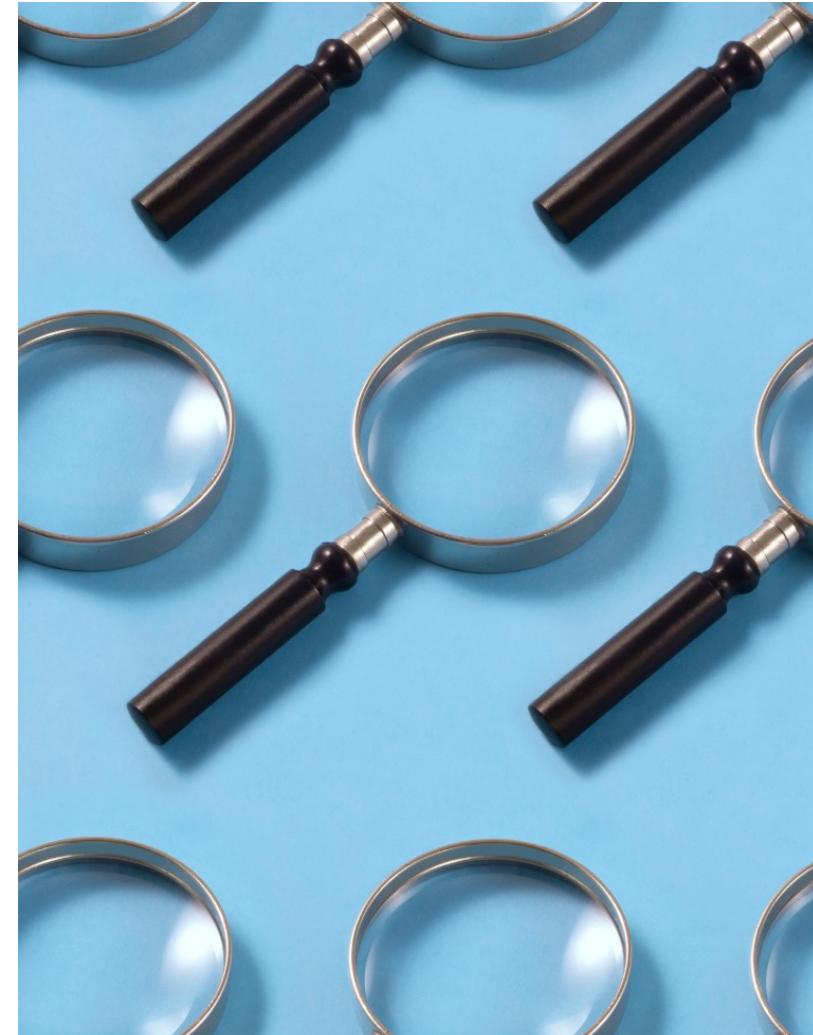




# LAM

<TEAM 4>

Nick, Lily, Carrie,  
Heejae, Evelyn, Yeon, Jay



2021 PeopleSpace presentation

# OUR TEAM IS?



Keonwoo Kim  
(Nick)



Sohyun Park  
(Carrie)



Bolim Lee  
(Evelyn)



Jupyo Hong  
(Jay)



Hyomin Kim  
(Lily)



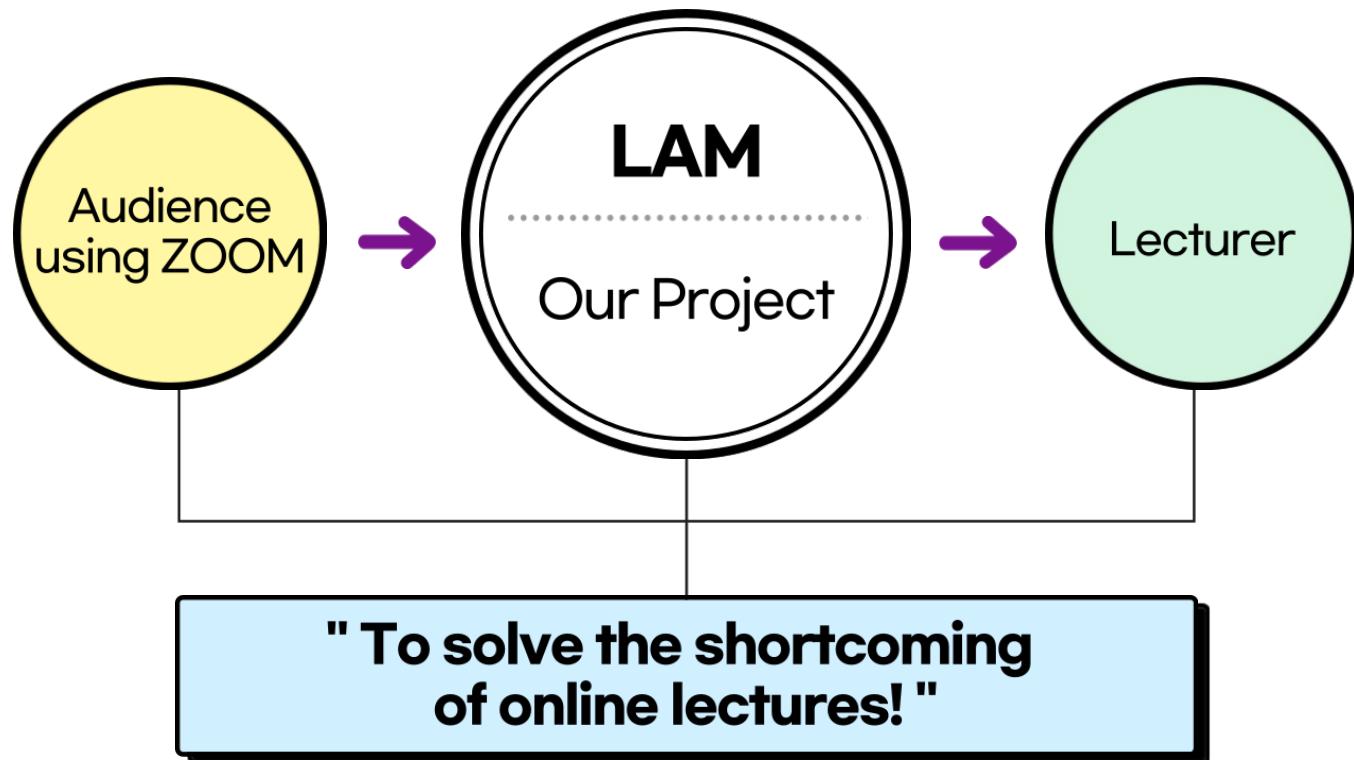
Suhhee Jae  
(Heejae)



Seungyeon Lee  
(Yeon)

# OUR PROJECT

1-1



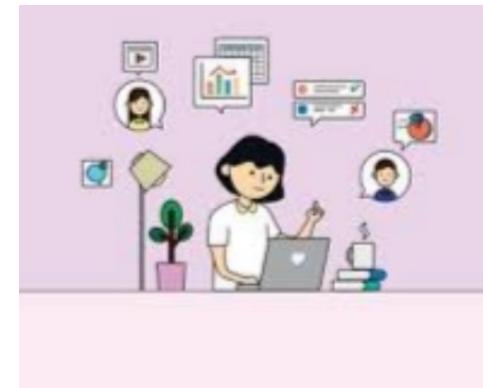
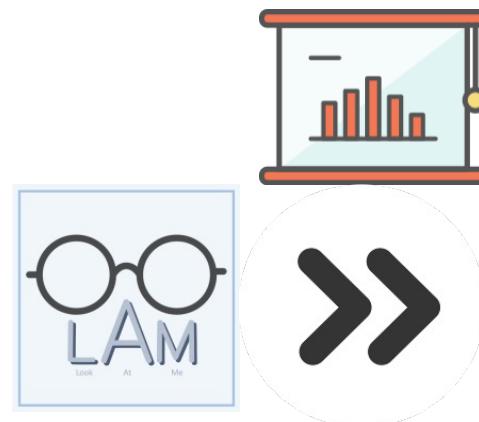
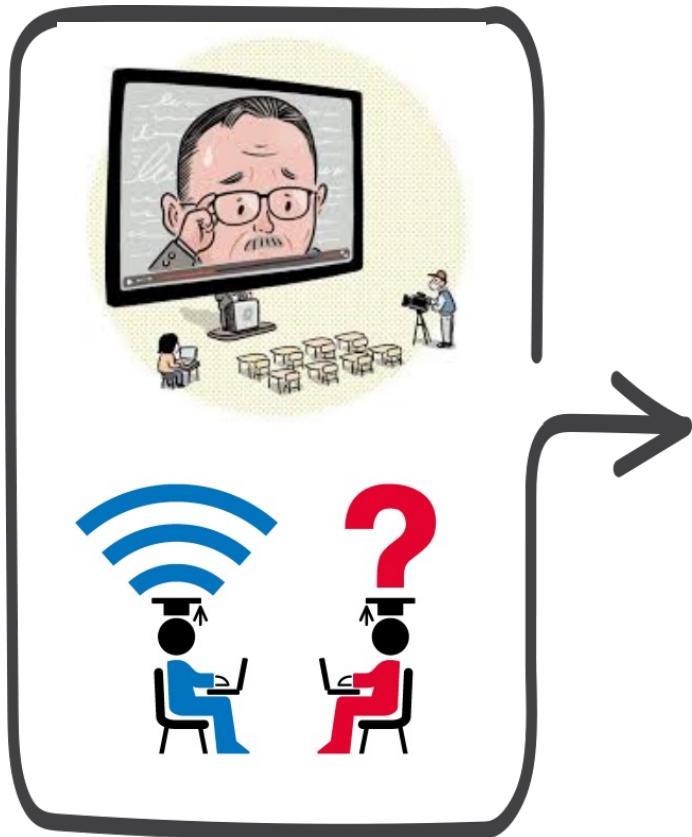
1-2

LOOK  
AT  
ME



1-3

# USE CASE



# Metrics & Visualization

2

## Attentive Score

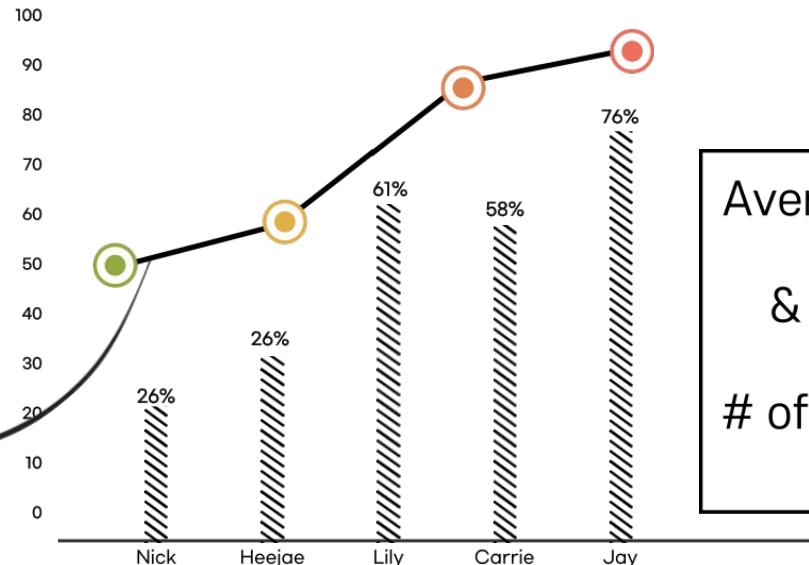


Reaction  
ex) Smile, Nodding, Clap



Being absent-minded  
Out of frame

Average attentive score  
of whole class  
by time



Average Attentive Score  
for Class  
& for each Students

# of Reactions Given by  
each Students

# Business Model (Value Propositions)

3-1



## Manage reaction of participants

The program will let  
you know  
if the participants  
are reacting or not!



## Instructor Adaptation to Online Class Environment

Similar to real-class,  
instructors can check  
how attentive the  
class is!



## Improve class quality

Many functionalities  
will improve the  
class quality

# Business Model (Customer)

3-2



## Segments

Online meeting hosts  
ex) instructor,  
teacher,  
corporate leader,  
keynote speaker



## Relationships

Continuous  
improvement and  
feedback  
  
Switching cost

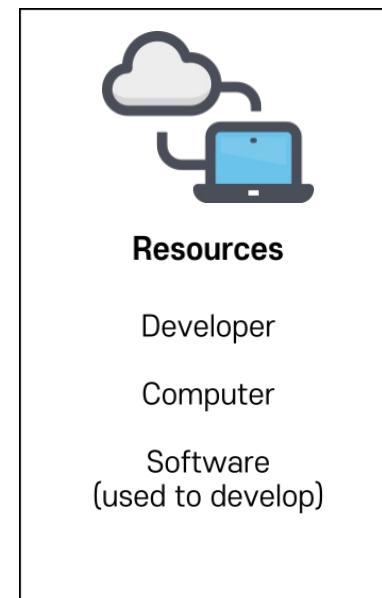
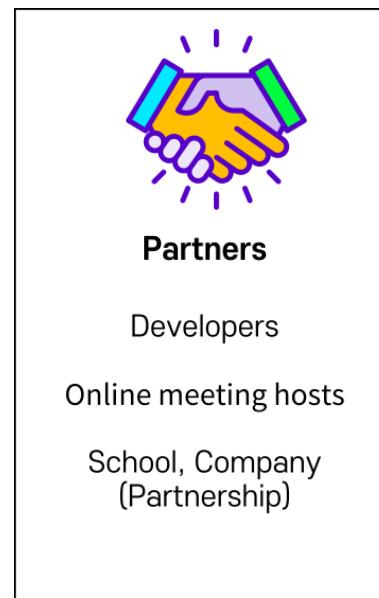


## Channels

Online website  
  
Promotion Code  
  
Advertisement

# Business Model (Key)

3-3



# Business Model (Monetary Problems)

3-4

## Cost Structure

- Personnel expense
- Device management
- Software usage fee



## Revenue streams

- Free for default
- Charge the premium (membership)

04

Our model detects  
people  
and checks their  
responses to see  
if they're focused.



# Categories of our data

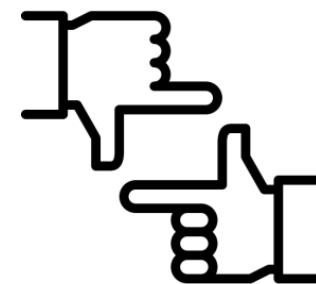
04



clapping  
laughing  
nodding



doing nothing



out of frame

## clapping & laughing 04



clapping

good reaction  
: +5 points



laughing

good reaction  
: +5 points

## **nodding & out of frame** 04



### **nodding**

the head is  
facing up  
or down



### **out of frame**

there's no head  
on the screen

## collecting of datas

04

laughing : 40 |  80%

nodding : 40 |  80%

clapping : 40 |  80%

doing nothing : 40 |  80%

out of frame : 5 |  10%

Asians

Young

## data bias

# How did we create a dataset? (1)

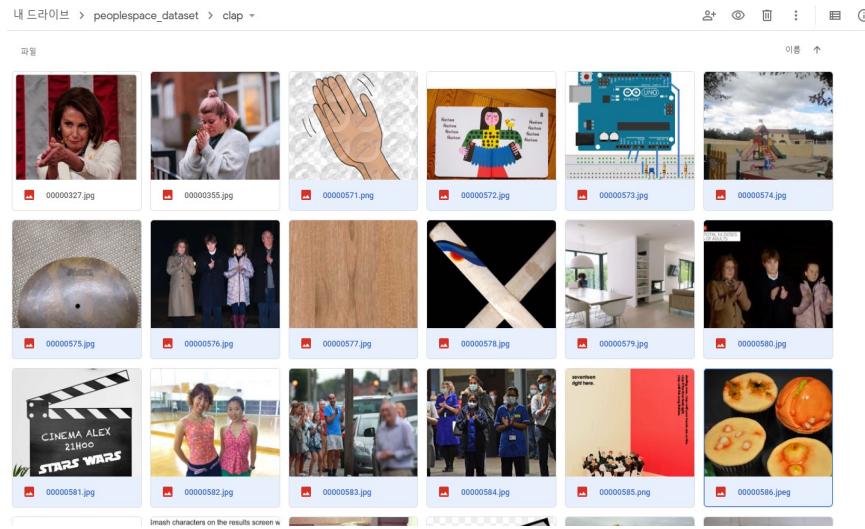
5-1



# How did we create a dataset? (2)

- Microsoft Bing Search API

```
for i in category:  
    img_urls = search_images_bing_many(key,f'{i}', total_count=800)  
    download_images(f'/content/drive/MyDrive/peoplespace_dataset/{i}', urls=img_urls)  
  
    ...  
  
    img_urls = search_images_bing_many(key,'a person clapping', total_count=800)  
    download_images(f'/content/drive/MyDrive/peoplespace_dataset/clap', urls=img_urls)  
  
    img_urls = search_images_bing_many(key,'a person yawning', total_count=800)  
    download_images(f'/content/drive/MyDrive/peoplespace_dataset/yawn', urls=img_urls)  
  
key = os.environ.get('AZURE_SEARCH_KEY', 'XXX')  
  
#이미지 다운로드  
category = 'clap','yawn','nod'  
path = Path('/content/drive/MyDrive/peoplespace_dataset')  
  
for i in category:  
    img_urls = search_images_bing_many(key,f'{i}', total_count=800)  
    download_images(f'/content/drive/MyDrive/peoplespace_dataset/{i}', urls=img_urls)
```



We had no choice but to pick  
the right image by hand

5-2

# How did we train a model?

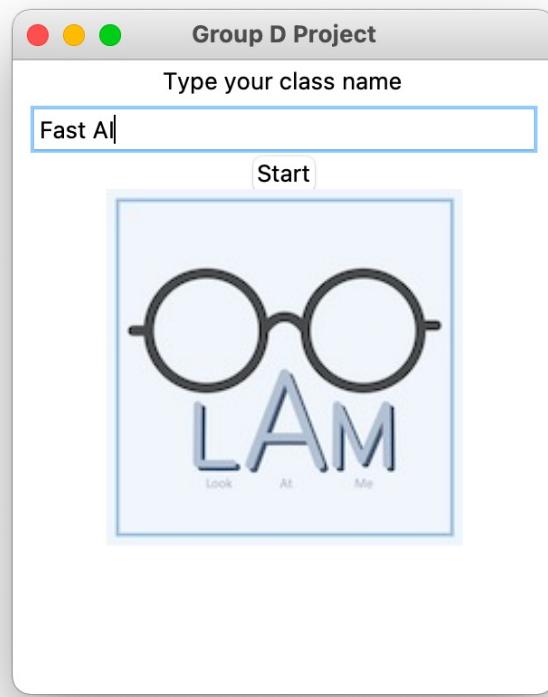
5-3

- We tried to achieve the best performance through various hyperparameters and models as much as possible.

```
#데이터블럭에서 검증셋의 비율을 말합니다.  
valid_percent_value = 0.2  
#데이터블럭에서의 시드를 말합니다  
seed_value = 42  
#바꿀 사이즈를 말합니다.  
resize_value = 240  
#이미지를 일부 잘라서 새로운 이미지를 생성할 때 최소한 남길 이미지의 비율을 말합니다. (0.5~0.8)  
#0.5 0.6 0.7  
min_scale_value = 0.7  
#이미지를 왜곡하여 새로운 이미지를 생성할 때 얼마나 왜곡할 것인지에 대한 강도를 말합니다.  
# 1.2 1.5  
mult_value = 1.2  
#resnet 버전을 선택합니다. (가능한 값 : 18,34,50,101,152)  
resnet_value = 50#현재 사용X  
#몇번 fit를 시킬지 정합니다  
fit_value = 10
```

min_scale_value	mult_value	resnet_value	fit_value	error_rate
0.7	1.2	50	10	0.310861
0.7	1.5	50	10	0.29588
0.7	1.3	50	10	0.347191
0.7	1.4	50	10	0.318352
0.6	1.3	50	10	0.354682
0.6	1.5	50	10	0.322097
0.6	1.4	50	10	0.369663
0.6	1.5	50	10	0.350936
0.7	1.5	101	10	0.340824
0.7	1.4	101	10	0.325843
0.7	1.3	101	10	0.298464
0.7	1.2	101	10	0.310861
0.6	1.2	101	10	0.32839
0.6	1.3	101	10	0.347191
0.6	1.4	101	10	0.322097
0.6	1.5	101	10	0.358427
0.7	1.5	50	10	0.304259

## UI / Front-end: Start Page



7 - 2

## UI / Front-end: Main Page

Zoom Meeting ID: 623-397-855

Speaker View

Hunter Walk, JoshBookRetina, Liz Eswein, Pasha Karasev, Erik Berlin

Paul, miliu, Courtney Nash, forrestbrown, Peter Pham

monique Woodard, Anisha Sunkerneni, NickHallam, John-Henry Scherck, Casey

stevenlevy, Sarah Frier, MYKIGAI, Toni Cowan-Brown, Shira Ovide

Hal, Ryan Kuiken, ryanl, Andrew Hutchinson, ben

Unmute, Stop Video, Invite, Participants 92, Share Screen, Chat 2, Record, Reactions, Leave Meeting

exit

The screenshot shows a Zoom meeting interface with a grid of 25 participant video feeds. The participants are identified by their names and some have profile pictures. The interface includes standard Zoom controls at the bottom: Unmute, Stop Video, Invite, Participants (showing 92), Share Screen, Chat (with 2 messages), Record, Reactions, and Leave Meeting. A blue button labeled 'exit' is visible on the right. The top right corner of the slide contains the text '76'.

76

Nick: 80

Heejae: 70

Lily: 90

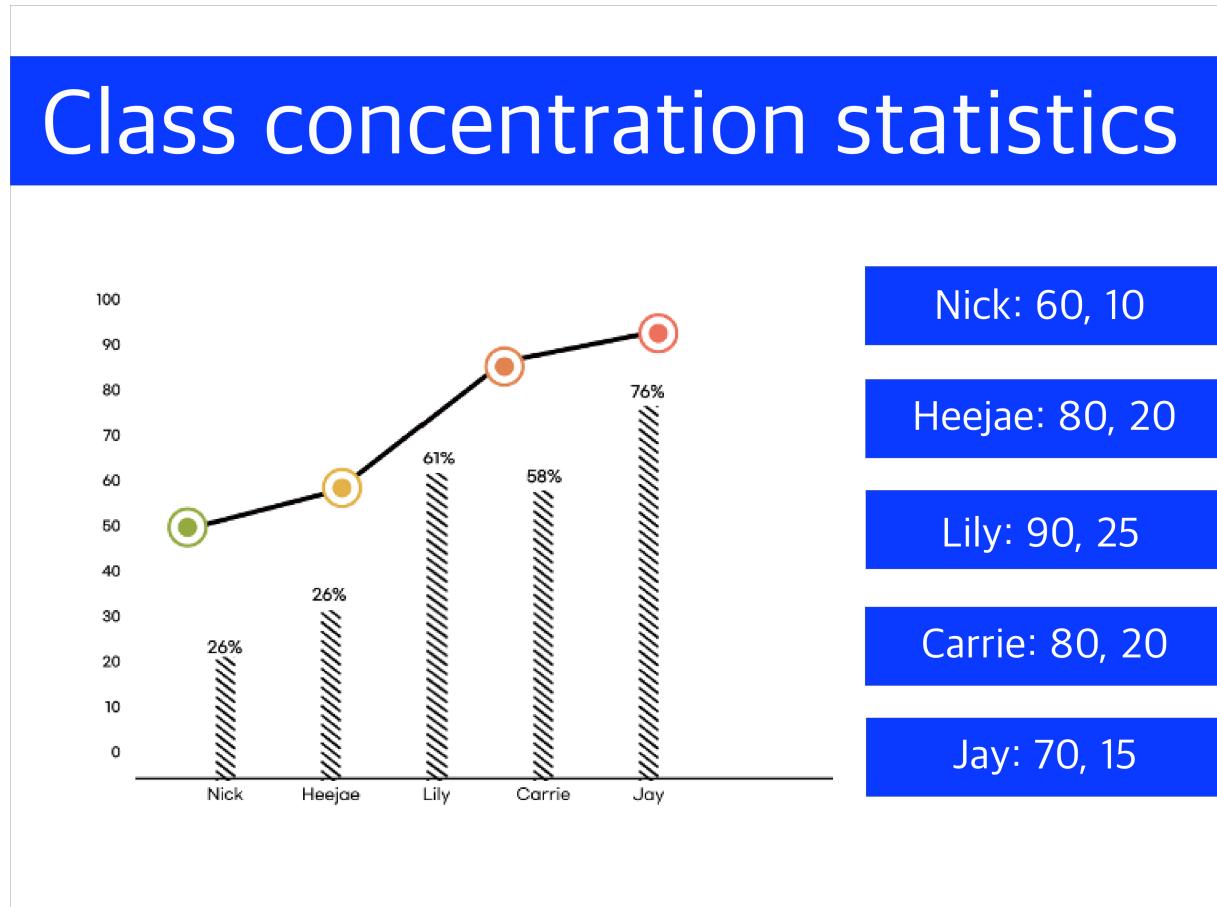
Carrie: 70

Jay: 90

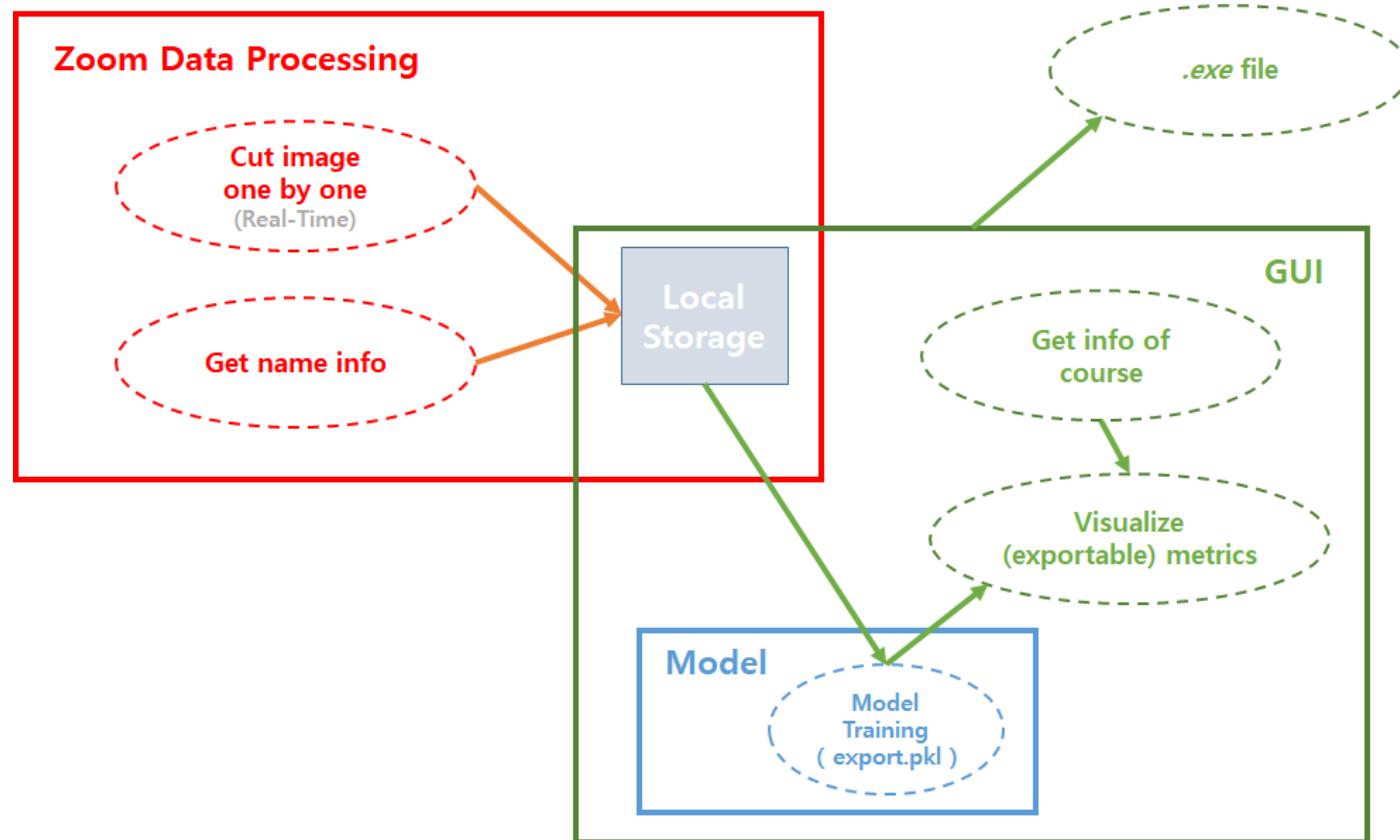
Key: 60

Kim: 50

## UI / Front-end: Statistics Page

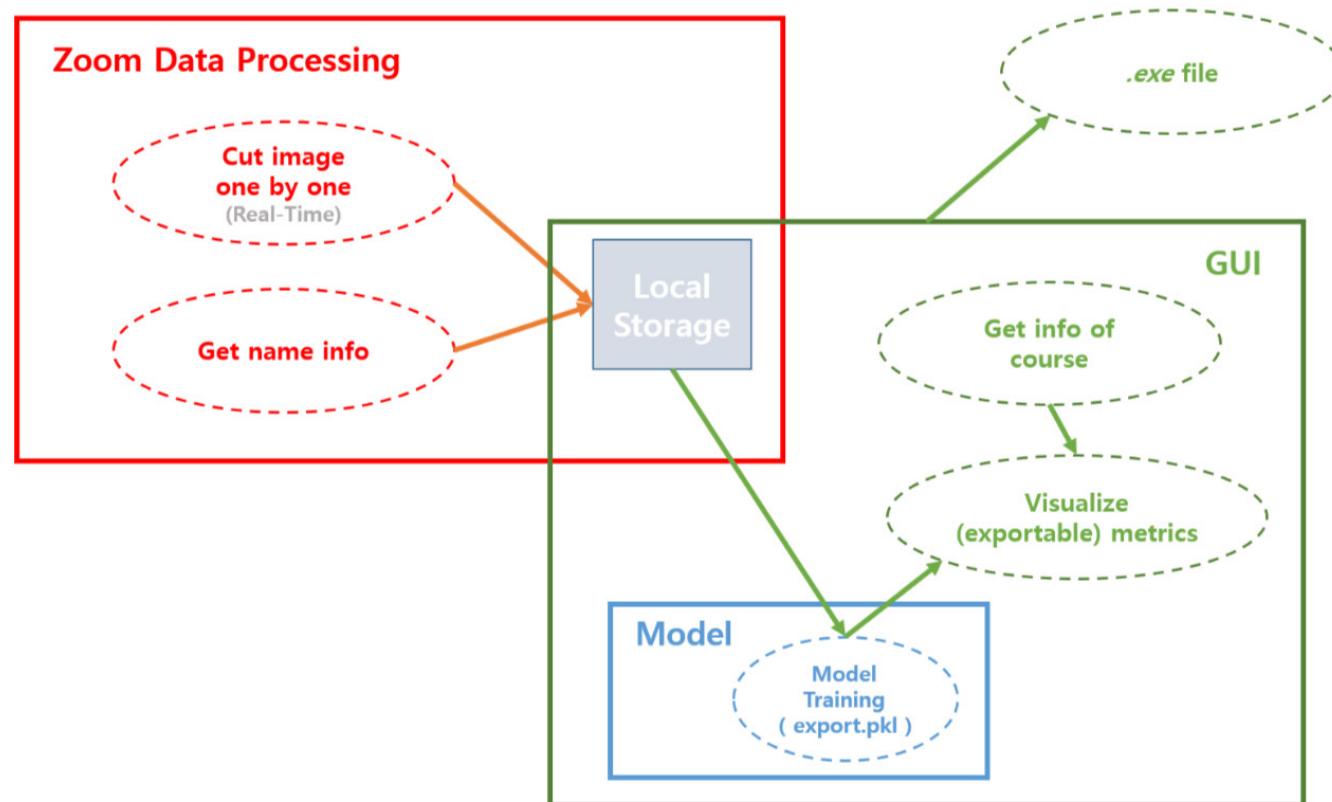


## Back-end



# Overall Flow

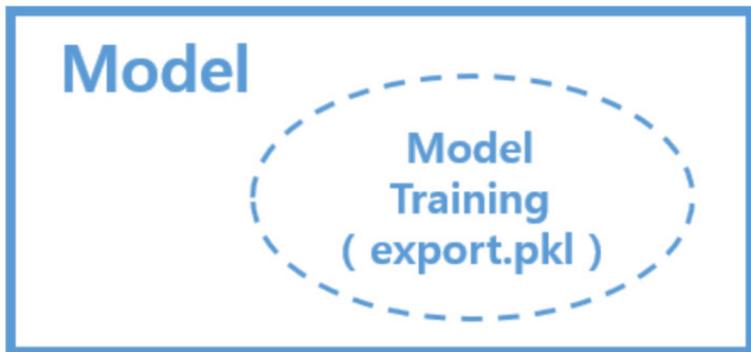
8-1



Model Training / Zoom Data Processing / GUI

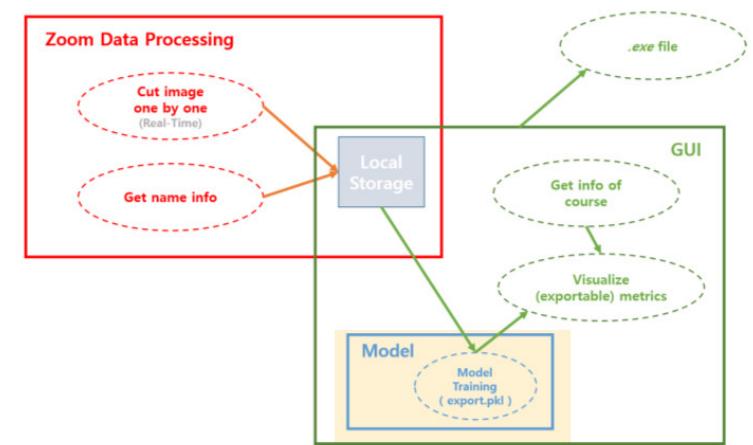
# Model Training (Evelyn, Jay)

8-2



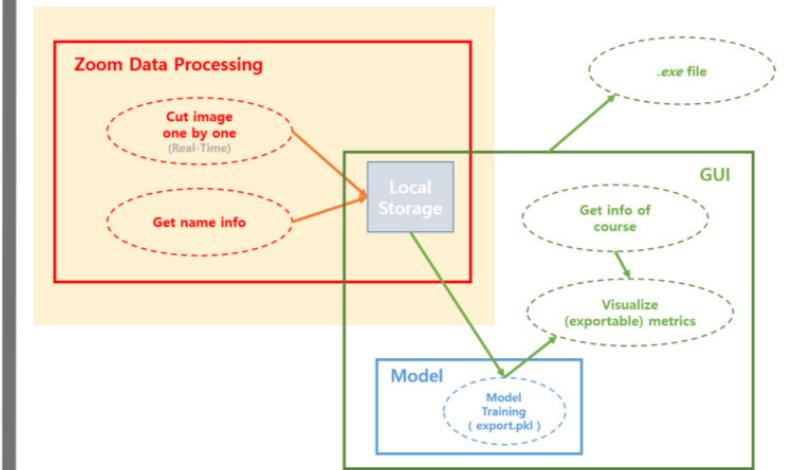
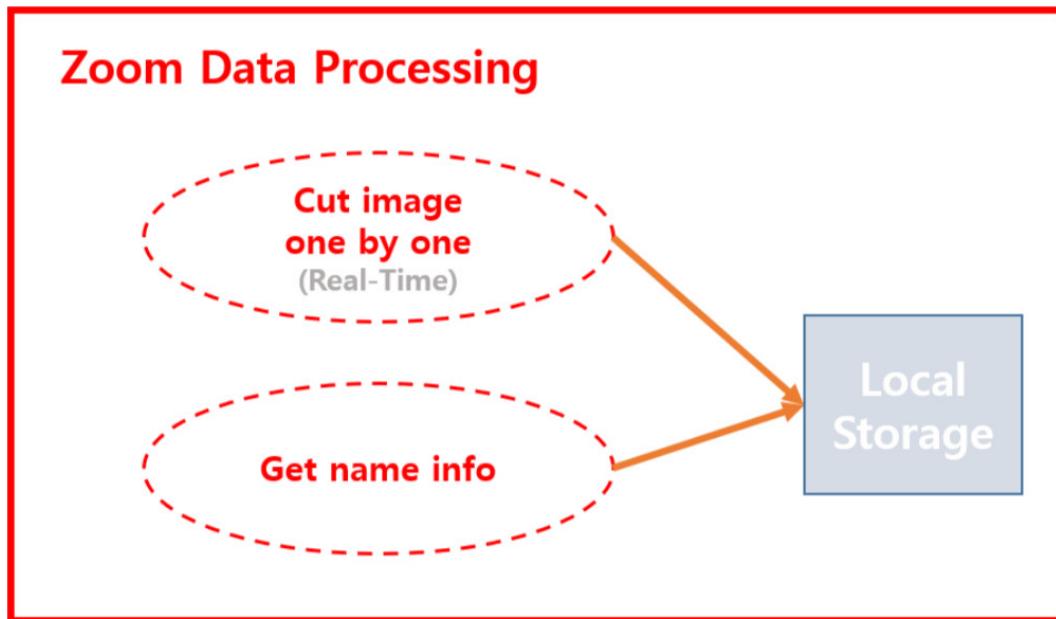
[ Dataset ]

Focusing / Default / Out of Frame



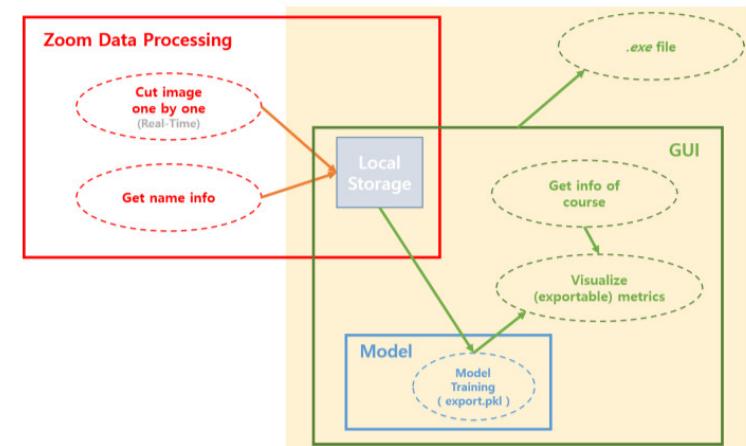
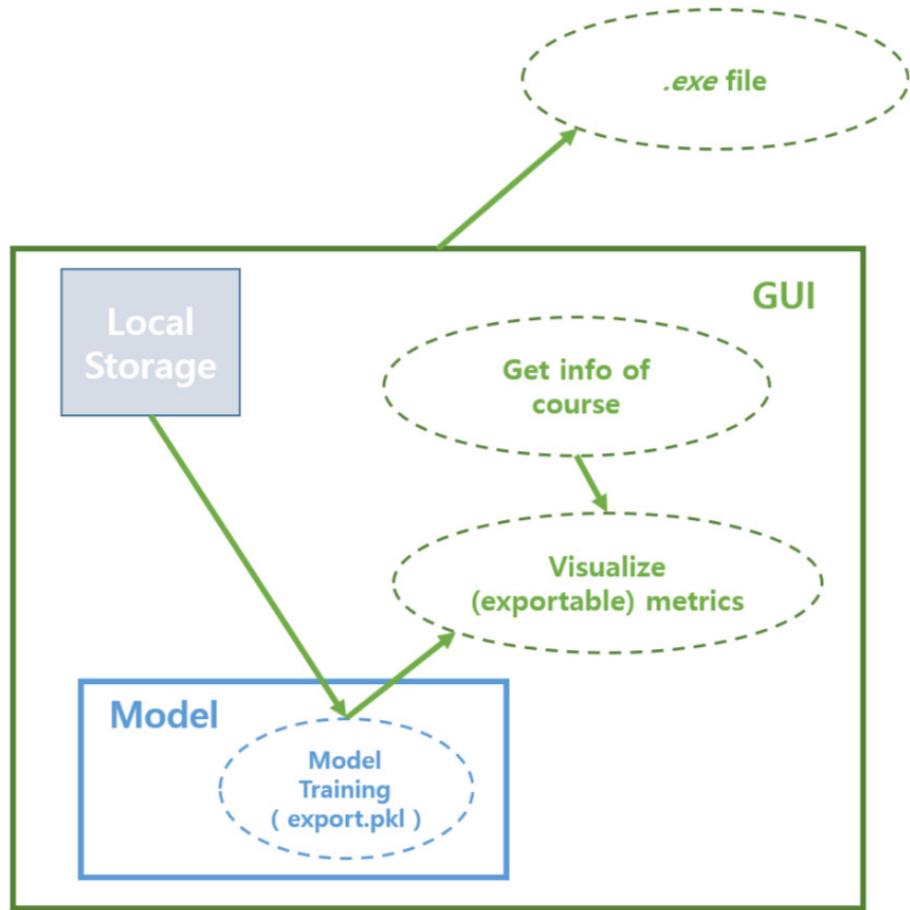
# Data Processing (Carrie, Yeon)

8-3



# GUI (Nick, Heejae, Lily)

8-4



## Download (.exe file)

8-5



Just simply download  
our program!

DOWNLOAD

...

Downloadable at our Landing Page