Gateway

A Creative Game Experience

逃過一劫
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First Introduction

OUR TEAM

李政懋

Build up GUI
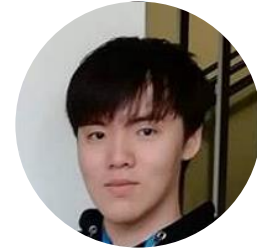Integrate model and data

陳麒宇

Build activity recognition CNN model

張伯豐

Data collection and analysis

孫茂勛

Setup camera setting
UI design

Our Goals

1. Improve interactions between players
2. Transmit tactic immediately

Reflect teammate's emotions immediately

Reflect each player's emotions as game going

Emotion recognition:
- angry
- disgust
- fear
- happy
- sad
- surprise
- neutral

Advantages

ONE SENTENCE MAY REPRESENT DIFFERENT EMOTIONS
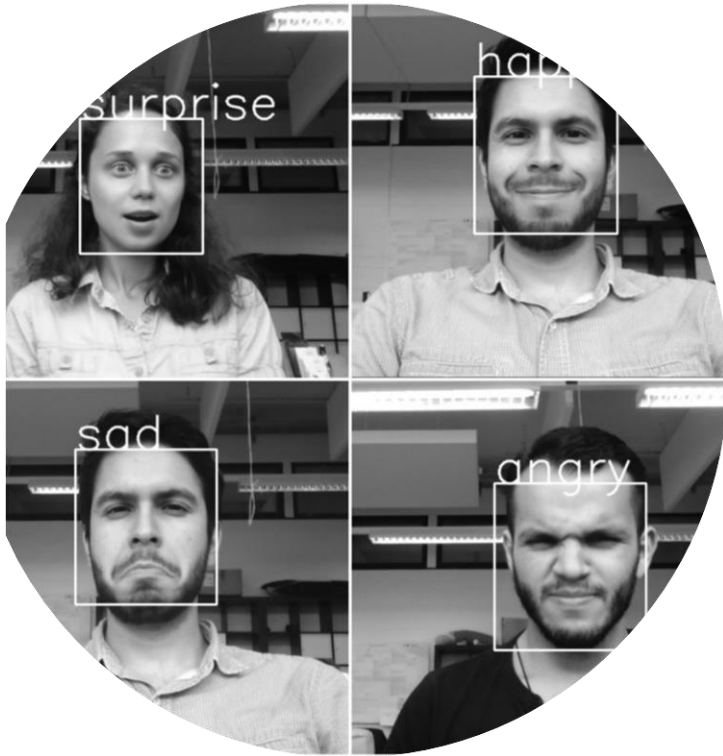
DON'T HAVE TO CONVEY EMOTIONS THROUGH WORDS

IMPROVE INTERACTIONS BETWEEN PLAYERS

Model

- Proposed by B-IT-BOTS robotics team
- Use fer2013 emotion classification datasets
- Keras CNN model + OpenCV
- Real-time detection

https://github.com/oarriaga/face_classification?fbclid=IwAR0-yV1uWDYewyfPnRhvDetm6u4KO1g_X8gpH4Ice1458lun_p-_VKa1AUA

■ Transmit tactics immediately by player's movements

- Transmit message without using hands
- Turn left/right, left down, right down, and forward
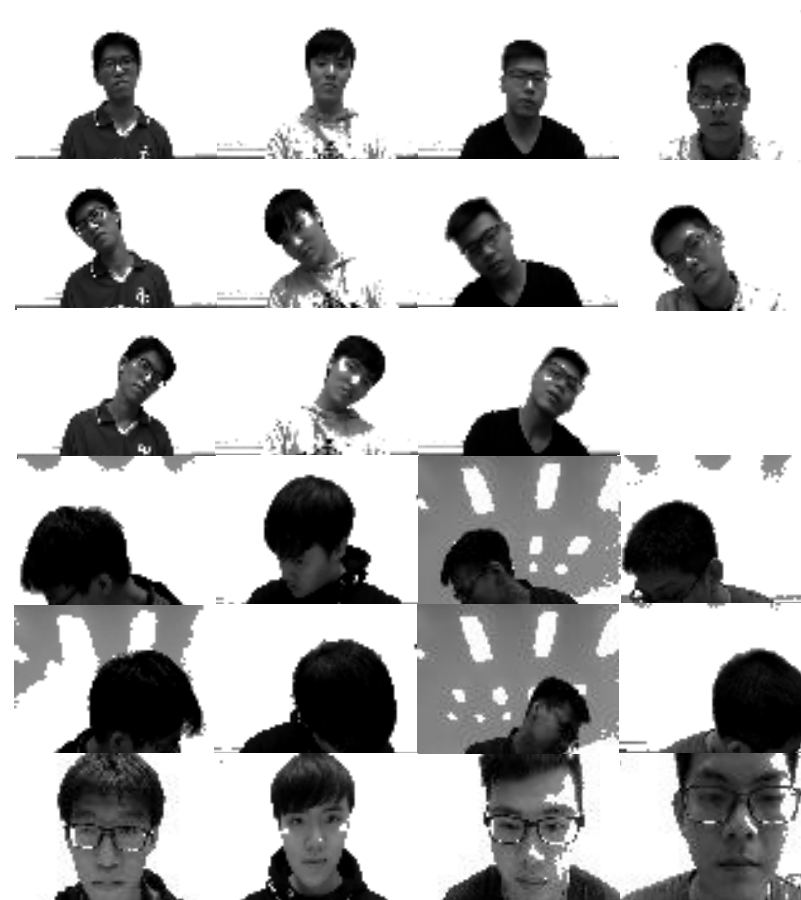- Each movement corresponds to an instruction

Advantages

- Save typing time
- Even if the game is equipped with chat software, the player is not necessarily able to use it
- Use simple and clear illustration can avoid poor communication

Second Method

Model

- Construct our own dataset
- Keras CNN model + OpenCV
- Real-time detection

Model

```
┌──────────┐
│  Input   │
│  Layer   │
└────┬─────┘
     │
     ▼
┌──────────┐
│Convolution│
│  Layer    │
└────┬─────┘
     │
     ▼
┌──────────┐   ┌──────────┐   ┌──────────┐   ┌──────────┐   ┌──────────┐
│ Pooling  │──▶│Convolution│──▶│ Pooling  │──▶│ Dropout  │──▶│  Fully   │
│  Layer   │   │  Layer    │   │  Layer   │   │  Layer   │   │Connected │
└──────────┘   └──────────┘   └──────────┘   └──────────┘   │  Layer   │
                                                             └────┬─────┘
                                                                  │
                                                                  ▼
                                                             ┌──────────┐
                                                             │ Dropout  │
                                                             │  Layer   │
                                                             └────┬─────┘
                                                                  │
                                                                  ▼
                                                             ┌──────────┐
                                                             │  Output  │
                                                             │  Layer   │
                                                             └──────────┘
```
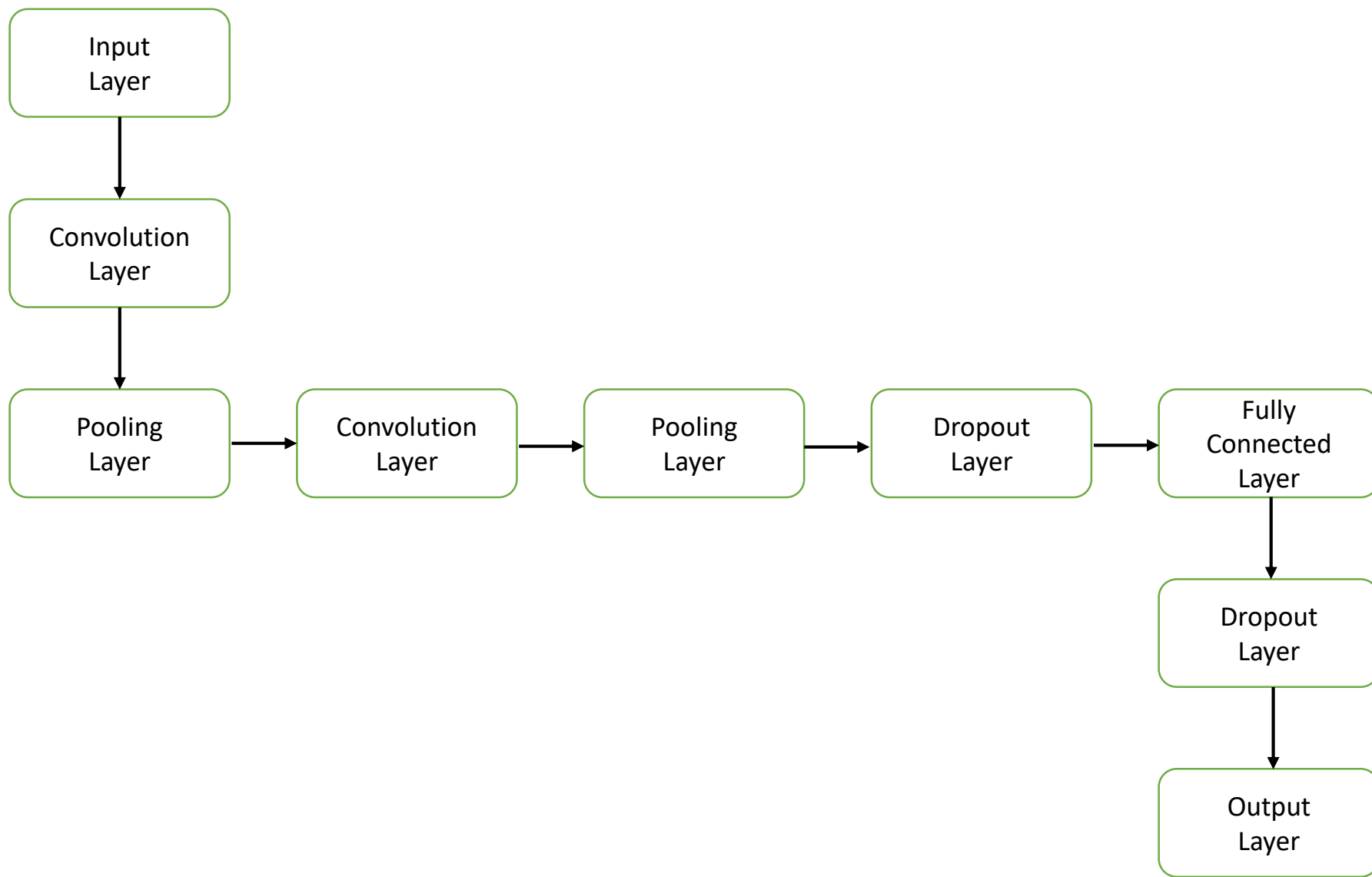
Third

Feature work

Feature work

- Complete datasets
- Add new movements
- Improve model accuracy
- Reflect player's emotions on the character in the game
- Add a menu to select the corresponding communication between player's movements and illustrations
- Adjust the direction of tactical according to the direction teammates facing
- Add sound effects for each tactic
- Only transmit the illustrations when pressing a specific button

THANK YOU