Benoji

Facial Expression Recognition

> Cloud Computing & Big-Data<

TEAM 30

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Introduction

- Background
- Objective
- Functions

Approach

- Cognitive computing model
- Development tools
- Overall design

Implementation

- Architecture
- Web application
- Use cases

Conclusions

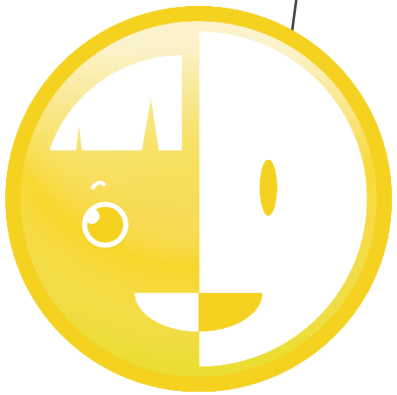
- Model shortcomings
- Model Improvement
- Our growth

Background

Introduction

Why we choose to recognize facial expression?

Why we use emoji?



Why Bemoji?

Bemoji

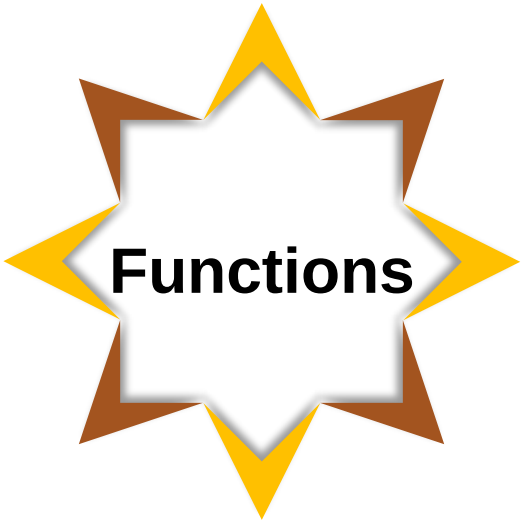
Objective

- Use camera to take a photo or upload a picture
- The picture are transmitted to the IBM Watson service including the face detect and expression recognition
- This model with the algorithms of deep learning and machine learning is trained by the datasets of KDEF
- Use Node.js to implement the interactions between front-end and back-end interactions
- An Emoji and other animation will be rendered based on the different expression detected

Functions

Image acquisition
Upload a image from user or take a photo in real time

Face recognition
Use API of face recognition from IBM Watson



Emotion presentation
Read the person's expression and show an related Emoji

Gender identification
Recognize the person's gender

Age prediction
Estimate an accurate range of the person's age

Cognitive computing model

CLOUD & BIG DATA & API

ARTIFICIAL INTELLIGENCE

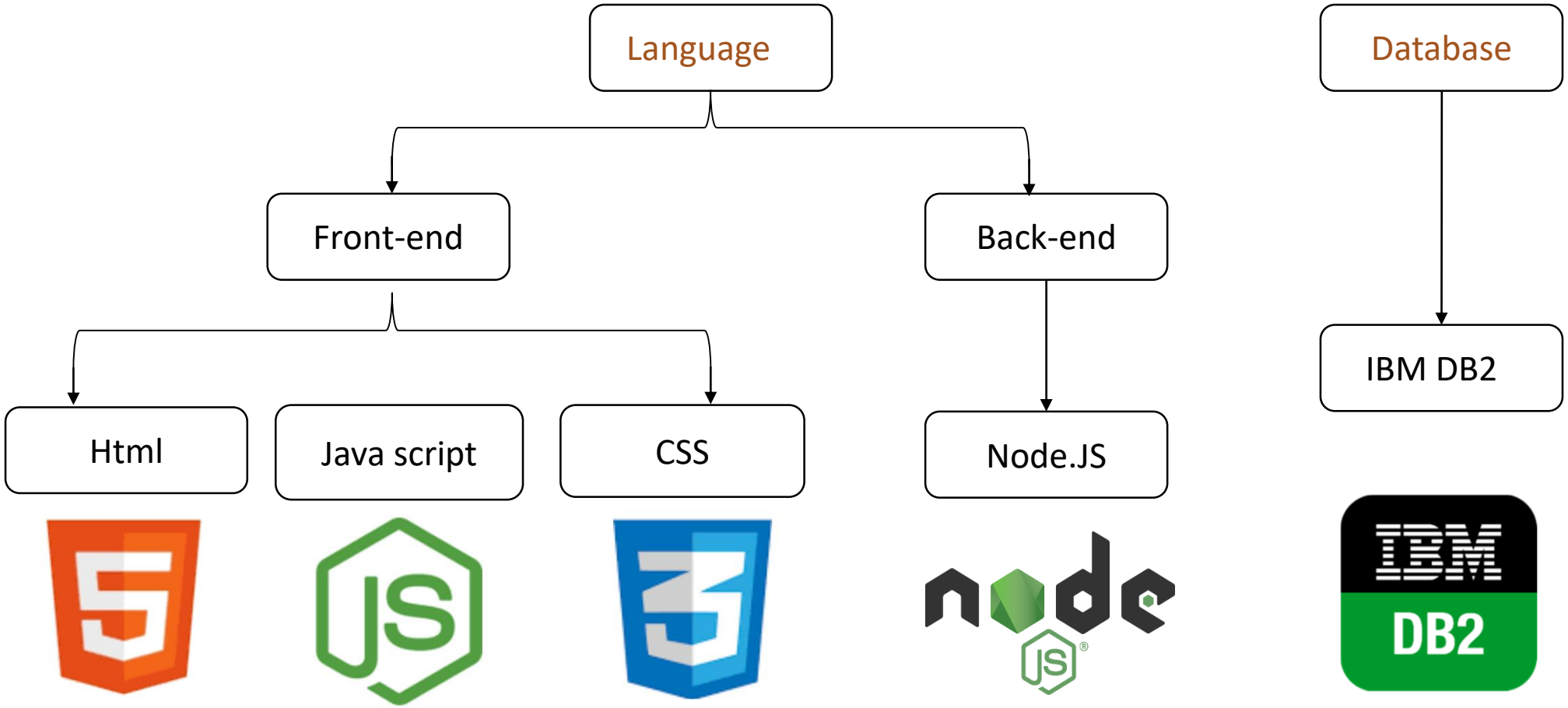
COGNITION COMPUTING

PEOPLE & TASK

The basement we used to build this model

Development tools

Approach



Overall design

Approach

Send a photo

Use camera to gain the image of one person/ Upload the image of one person from user.

Face detect

Detect whether a face is included in the photo, if so cut the part of face and transmit it to the next part.

Facial expression recognition

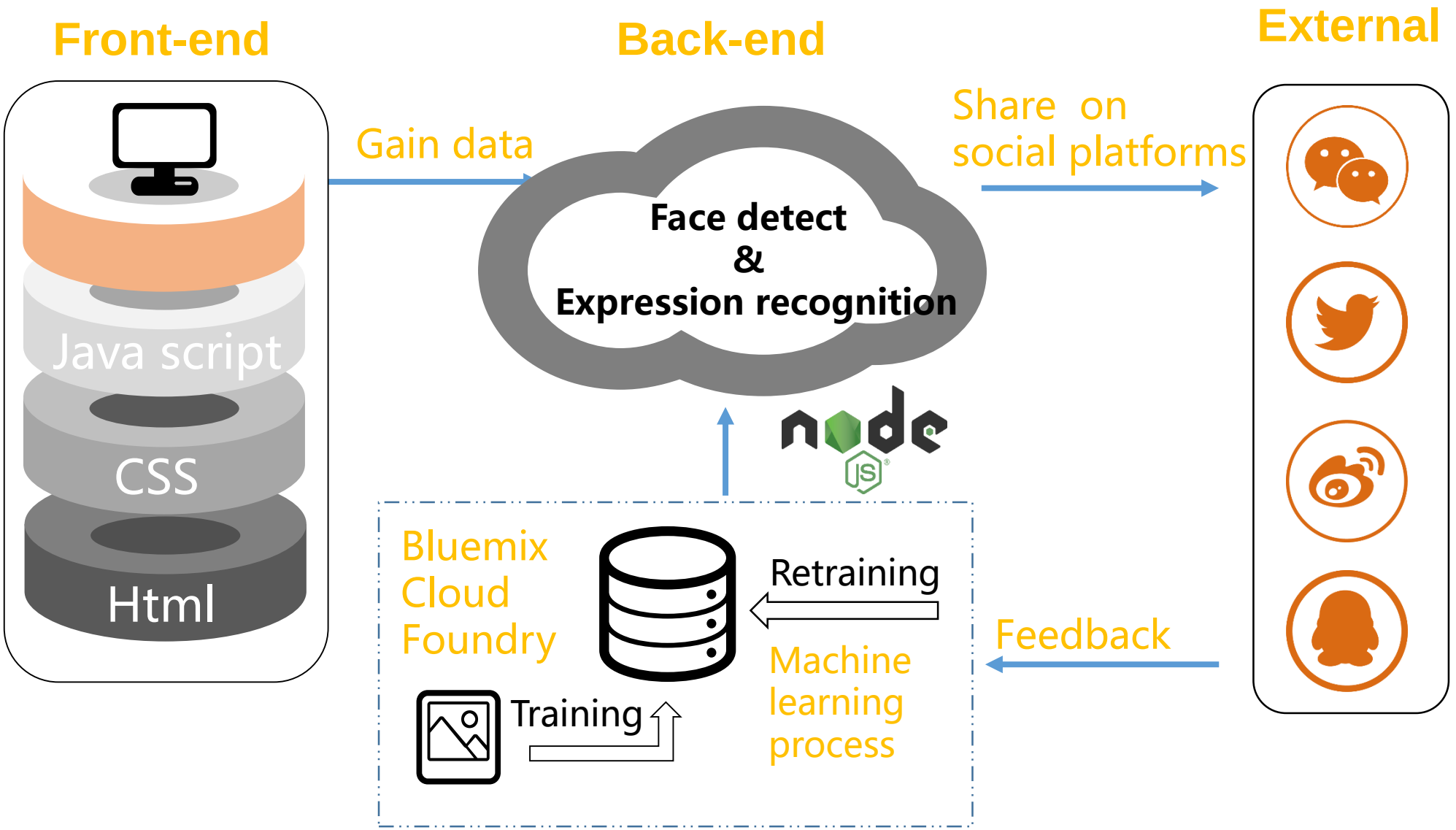
Recognize the face' s expression and output the result.

Match a emoji

Match a emoji with the same expression to the face detected according to the result.

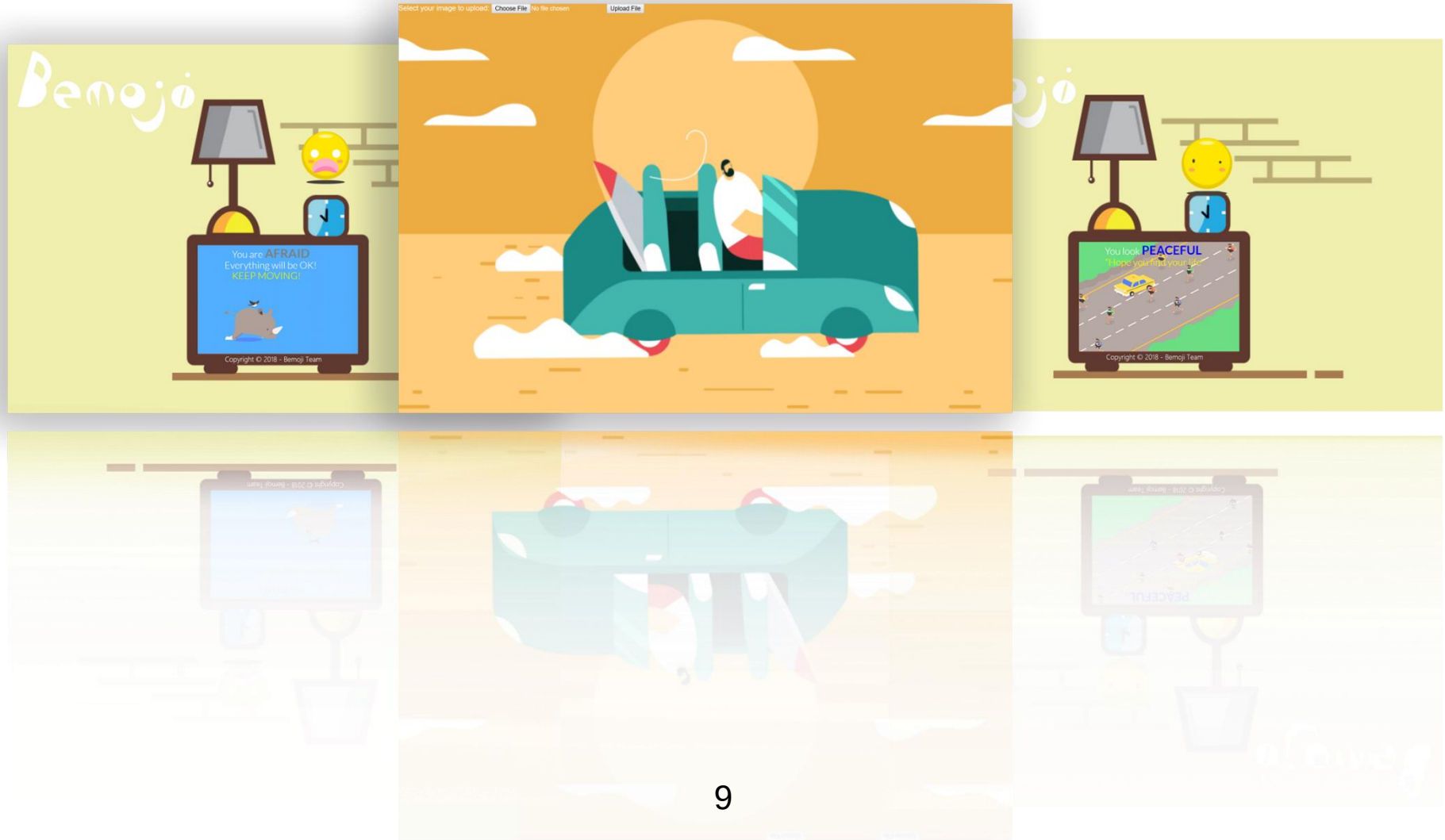
Architecture

Implementation



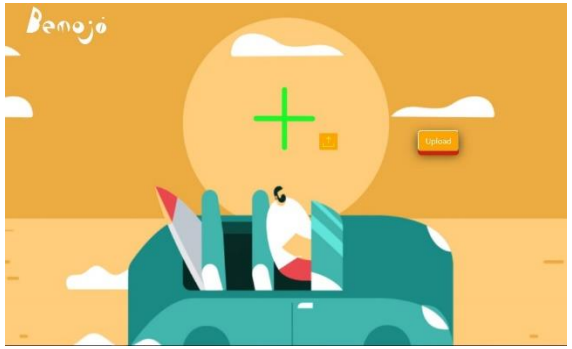
Web application

Implementation

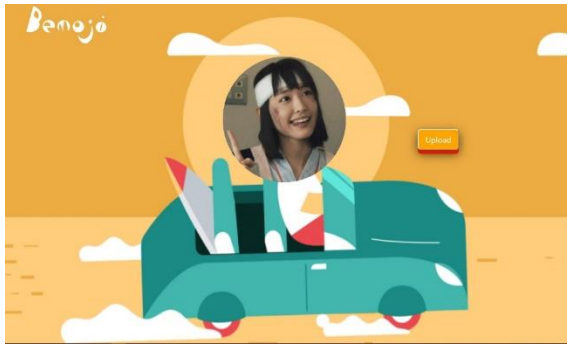


Example one

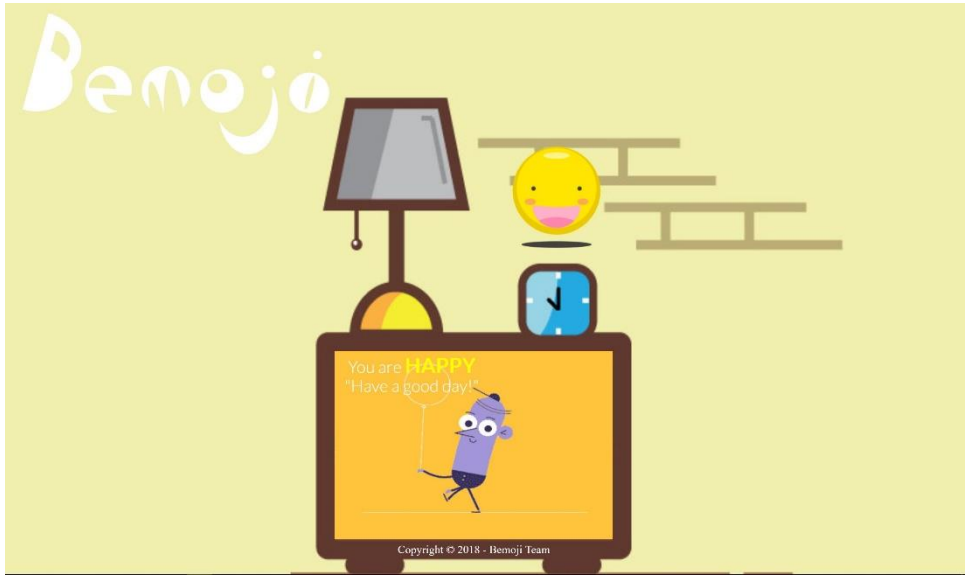
HOMEPAGE



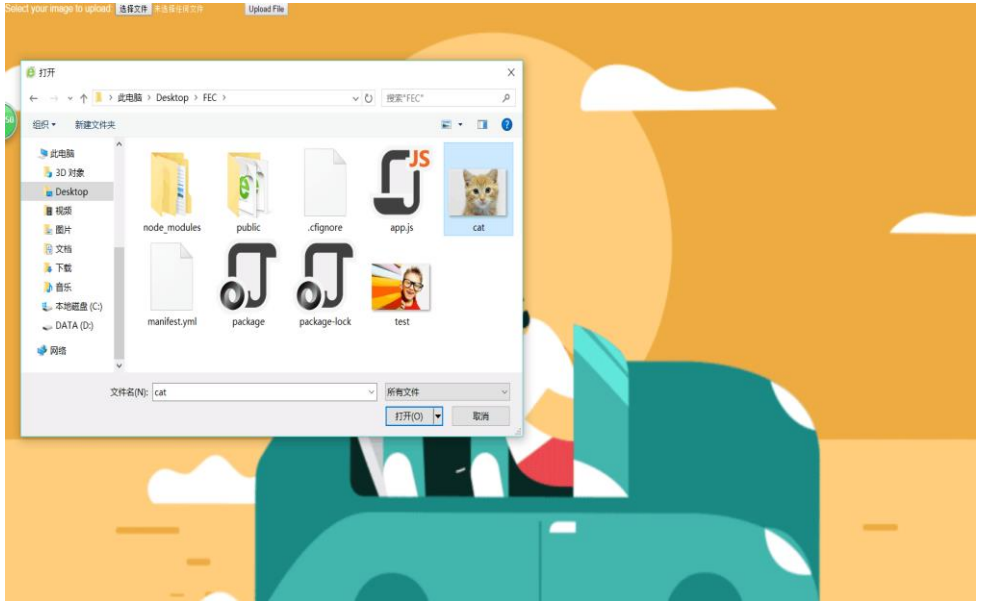
UPLOAD A PICTURE

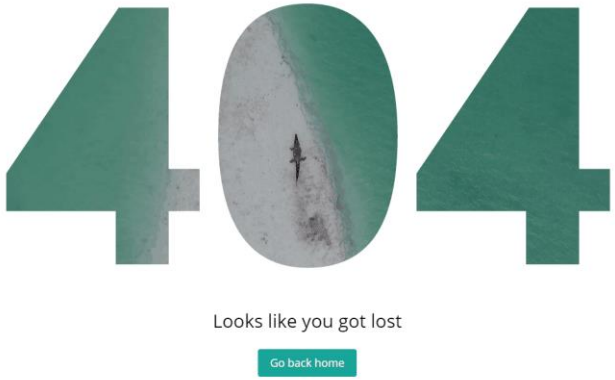


RESULT ANALYSIS

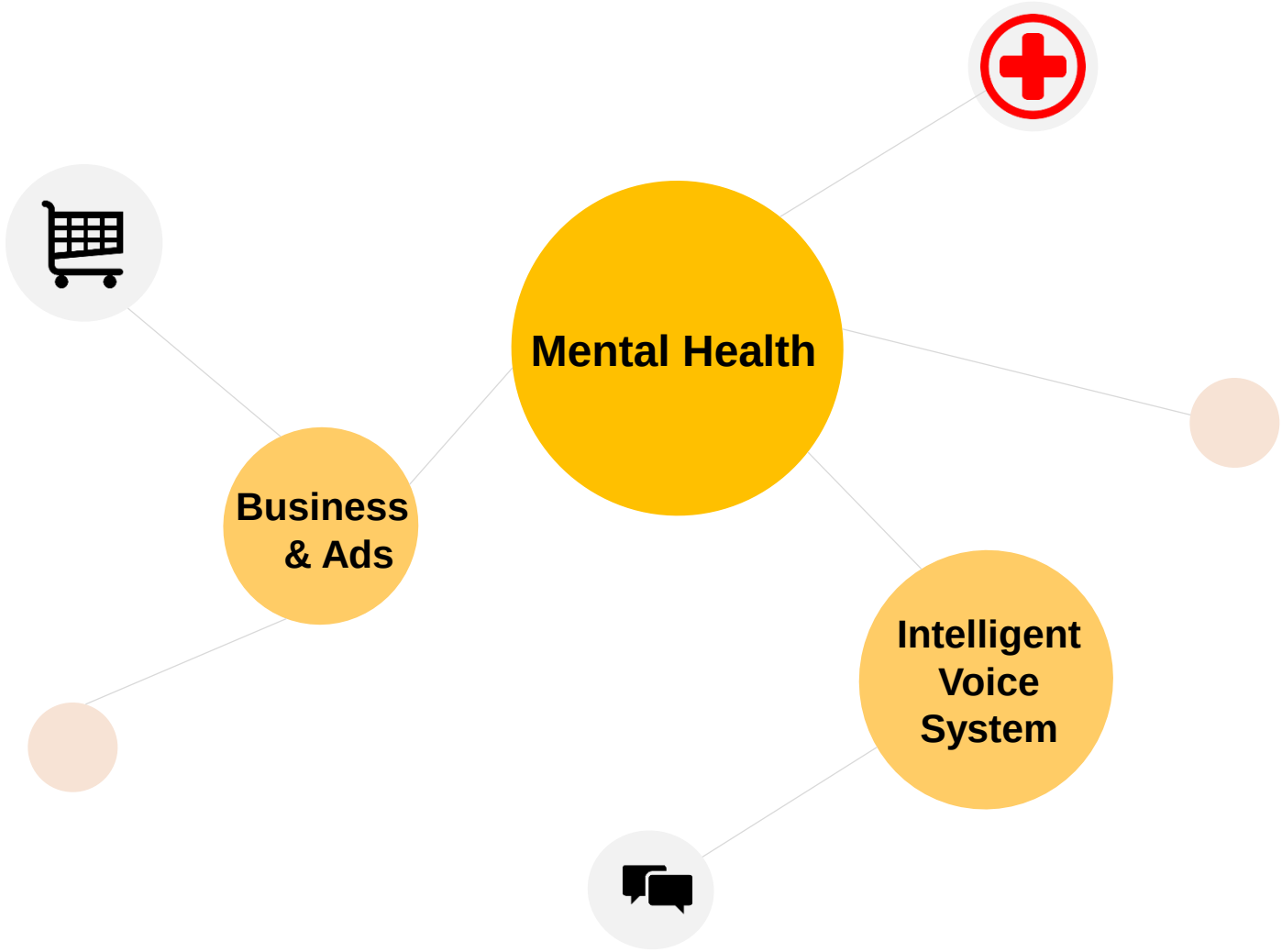


Example two


Select your image to upload:
选择文件
未选择任何文件
Upload File
打开
此电脑 › Desktop › FEC ›
搜索"FEC"
组织
新建文件夹
此电脑
3D 对象
Desktop
视频
图片
文档
下载
音乐
本地磁盘 (C:)
DATA (D:)
网络
node_modules
public
.cfignore
app.js
cat
manifest.yml
package
package-lock
test
文件名(N): cat
所有文件
打开(O)
取消


404
Looks like you got lost
Go back home

More use cases



Model shortcomings

Conclusions

IBM Service

The cloud service maybe interrupted sometimes

Datasets

Dataset is not big enough

Accuracy

The trained model’s accuracy is not very high

Limitation

Use cases are limited

Model improvement

Conclusions

We can train with larger datasets to get more accurate results

Bigger datasets

Improve front-end and back-end interactions for more stable services

Stable service

We can share our emoji to social platform to accomplish more functions

More functions

Our growth

Conclusions

- Learned more about cloud computing
- Learned more knowledge in programming
- Learned how to work as a team

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Thank you

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