

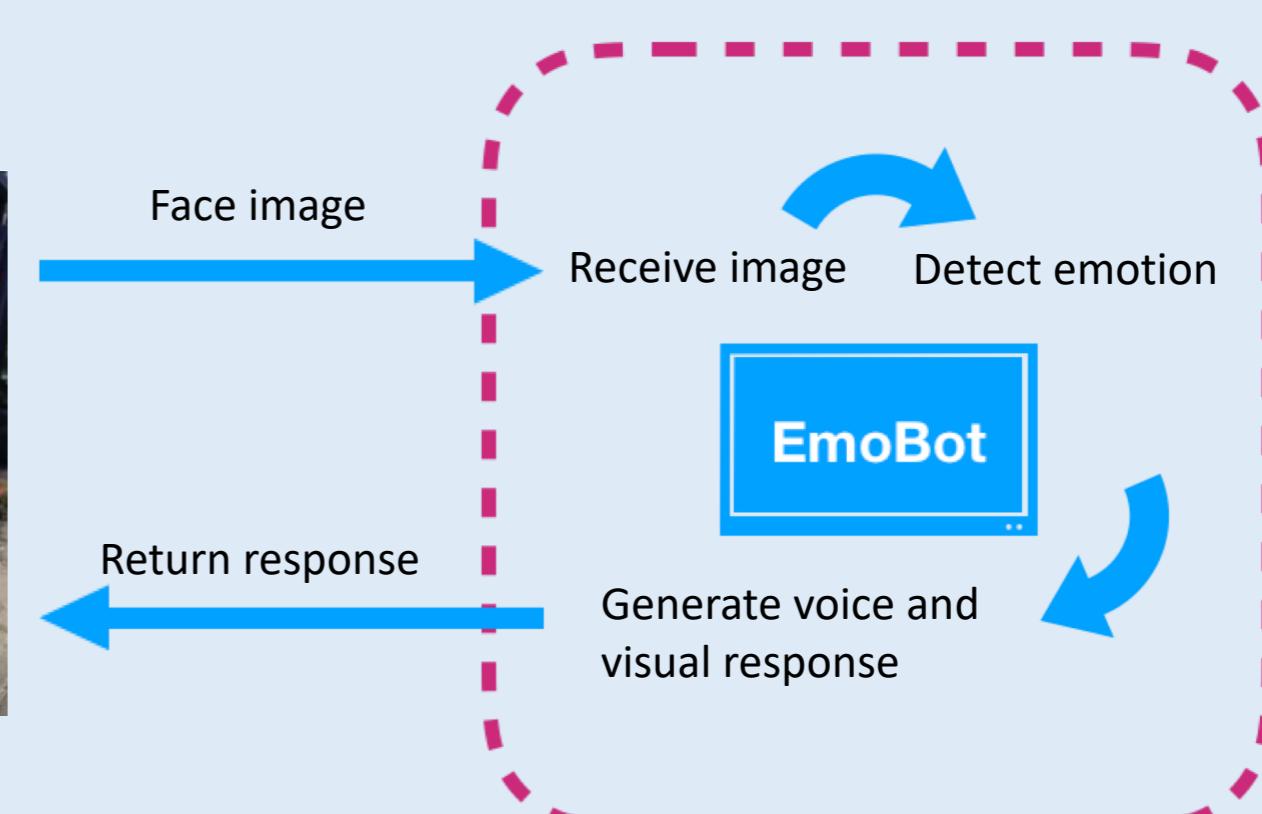
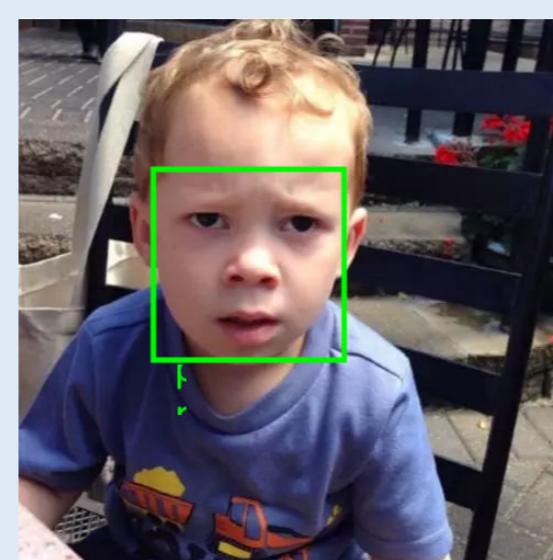
EmoBot (Emotion Robot) is a cloud-based system that allows human-robot interactions based on emotions. It can interact with a person by voice and a visual face. The visual face and voice changes according to the person's facial expression.

Objective

- Cloud-based services.
- Emotion detection and feedback

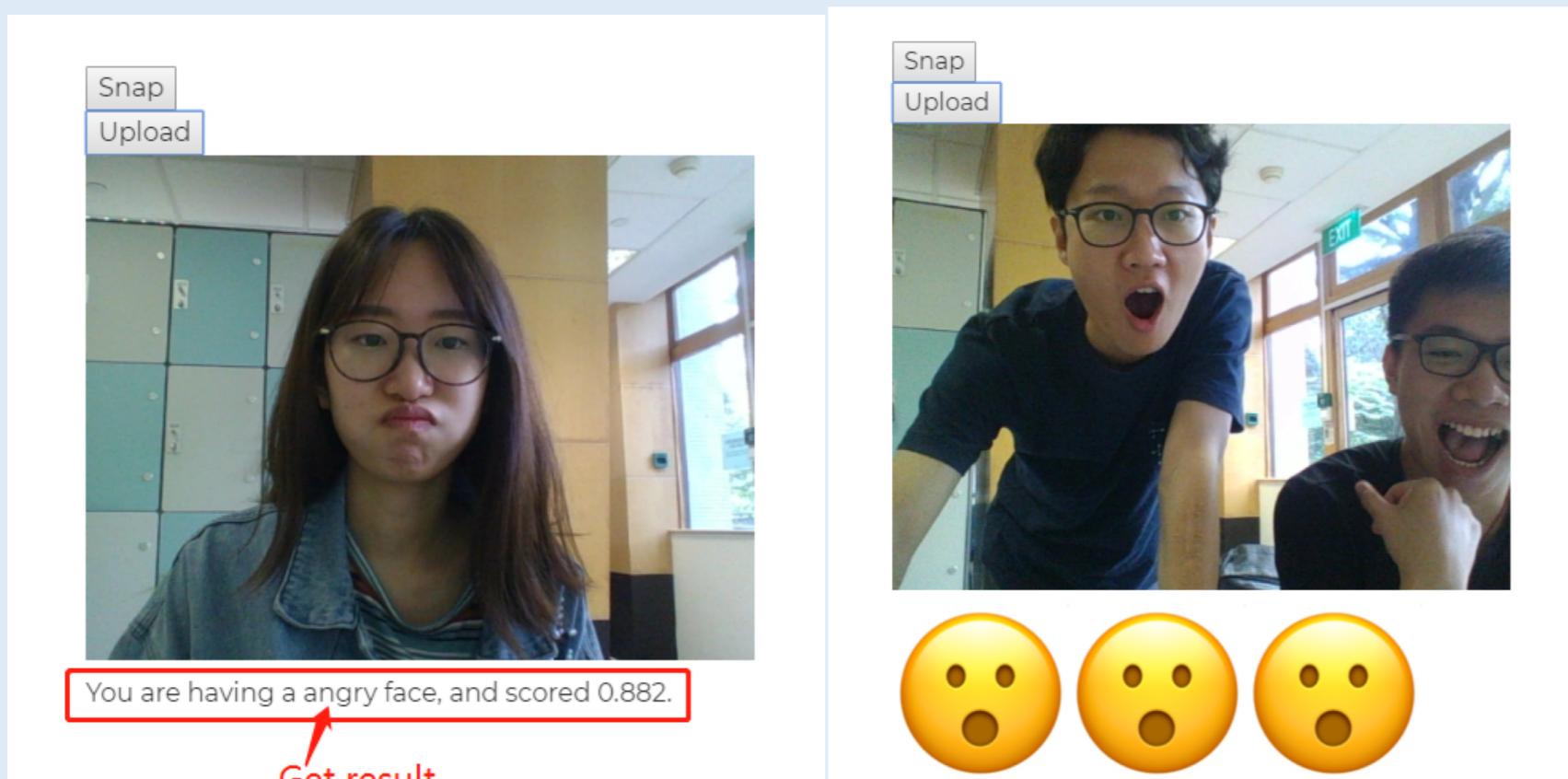
Use case (on the right side)

EmoBot interacting with an unhappy child



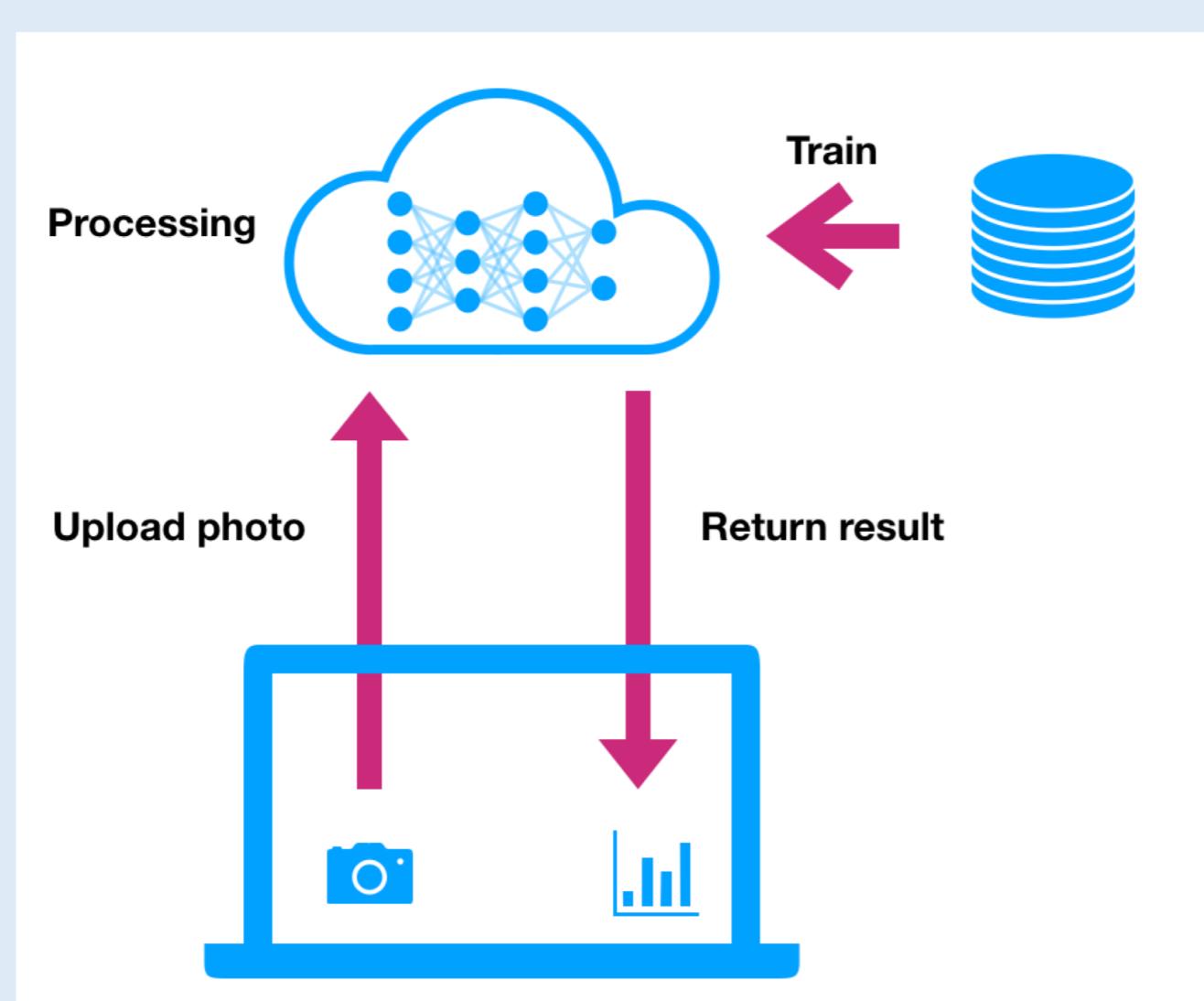
Examples

<http://group4-project.mybluemix.net>



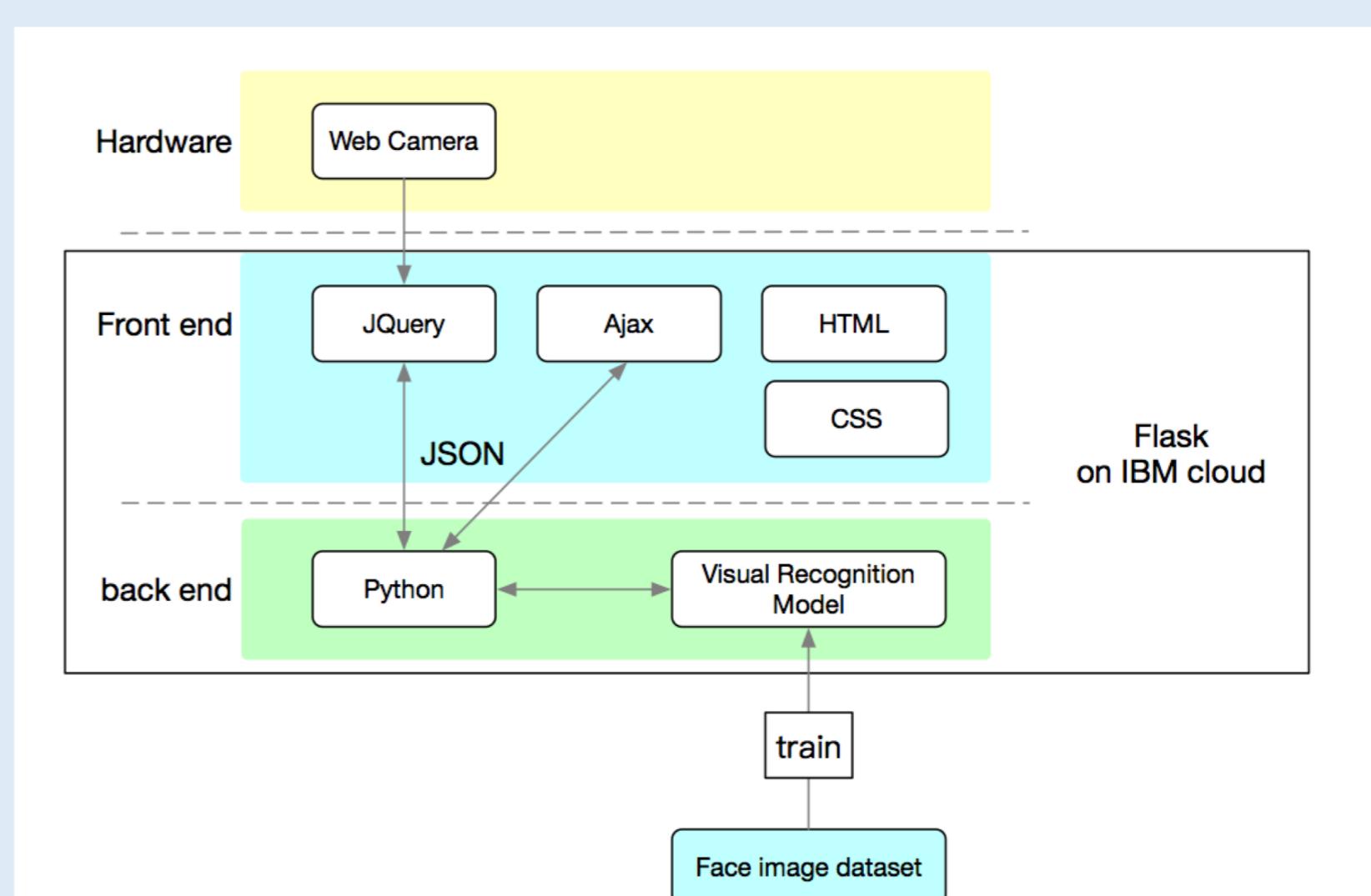
Approaches

1. Get the dataset for training
2. Train the model
3. Get pictures from users
4. Detects the emotion
5. Returns the result



Implementation & Architecture

- IBM Watson Visual Recognition (SaaS)
- IBM Python Flask Basic (PaaS)
- JQuery, Ajax, HTML, CSS
- Camera: Call WebcamJs library



Dataset KDEF

[Lundqvist, D., Flykt, A., & Öhman, A. (1998)]

- With angry, fear, disgust, neutral, surprise, sad, happy.
- 244 MB in total.
- 348 portrait photos for each class.



Conclusions

Lessons:

- Implementation of Cloud services
- Experience of developing web application
- Interaction between front end and back end
- Ways to improve model accuracy

Limitation:

- Real-time emotion detection not implemented
- Low accuracy: 66.07%, tested on 504 pictures

Other use cases:

- Robot for the elderly, for people with mental disability