AR + FR 開源戰鬥力探測器

David Chang: Back-End Developer, Kuberentes admin, DevOps

開源戰鬥力探測器 Scouter

起因

- 七龍珠
- COSCUP

Outline

- Live demo
- Architecture
  Data mining
  Face detection & recognition

Feature & Architecture

- 頭像圖檔 + 開源貢獻數據 - Github api + go-github (Golang)
- 人臉辨識特徵值產生 - Face detection api (Python)
- API server 與資料庫串接 - Flask + PyMongodb (Python)
- 攝影視訊串流 + 人臉探測 + 前端AR UI - Unity + face tracker (C#)

Data mining

1. Download user data and avatar

2. Fetch contribution statics

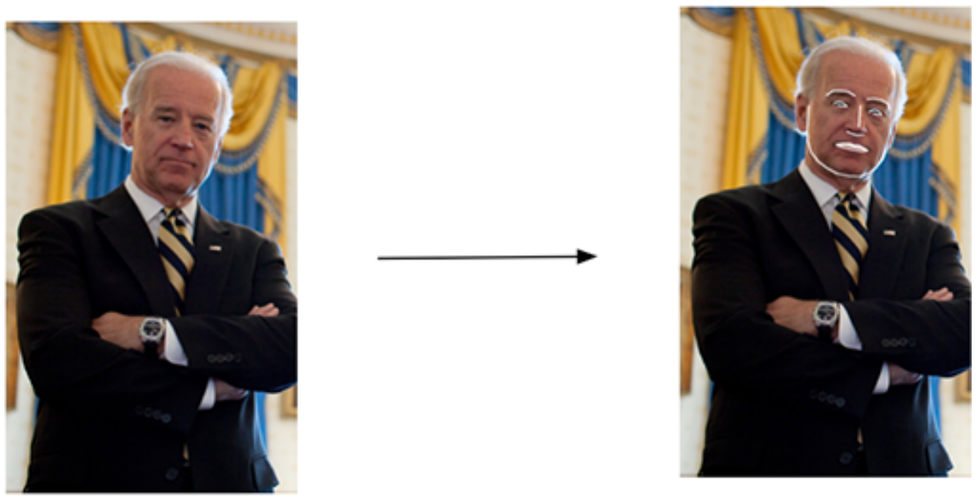
Github API
go-github (Api library in Golang)

Face detection & Face recognition

The world's simplest facial recognition api

Data pre-processing -> Face encoding -> Face recognition

It's really easy!



Input

Output

Api server

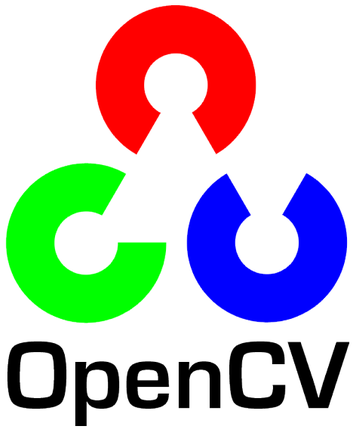
- Only one API
  - Consume face image from App
  - Produce user data to App
- Python framework: Flask

App and AR unity

Unity : build app and AR UI

OpenCV : image processing library

dlib : face recognition tools, models and algorithms



Workflow

Camera	APP	API server	Face recognition	DB	API server	App
Video Stream	Face Image		Identify User	User Data		Show data

Issues

1. Github data source
    - 3000 human faces / 14000 avatars
2. Face recognition API tuning required
3. Unity and C# newbie

『不是不準，只是正確機率不夠高。』

— XD

Review

Golang crawler & html parser	Golang
Github API	
Python Flask	
Face Recognition API	
Unity	
OpenCvForUnity	
dlib shape predictor	
C#	

『因為我自己想做，還有當初推坑我的人太厲害。』

— David Chang

The end

投影片及講稿 https://github.com/chechiachang/my-speeches/tree/master/fr-ar-open-source-power-detector

開源原始碼 https://github.com/chechiachang/scouter

Deckset: md to presetation