Chang Huai-Yuan

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Education

- **Peking University, M.E. in Software Engineering**, Sept. 2017 - Aug. 2020
- **Chung Yuan Christian University, B.S. in Computer Science and Information Engineering**, Sept. 2013 - June 2017

Experience

- **ioNetworks**, Taiwan, New-Taipei

  AI Research and Develop Engineer, Oct.2022-Now

  - Mask detection at the bus stop with the low angle and distant target get 88% accuracy
  - Developed a 97% accuracy pose detection model for Primax on the validation set, and got the fine feedback on CES
  - Optimized YOLO series, and improved YOLOv5s mAP from 37.4 to 43 with 10% inference speed lost on COCO datasets

- **Infortrend Technology**, Taiwan, New-Taipei

  AI Research and Develop Engineer, May.2021-July.2022

  - Led project AI Service API and project Resource Space
    - Enhannced face detection about 2% accuracy without inference speed increased through BoF training method
    - Make the asian face recognition accuracy close to the west one through the optimization and fine-tuning with asian face dataset
    - Utilized shared memory to resolve the issue of shared face embeddings database between multi-processes and accelerate the performance about 3 times
    - Accelerated 3x inference time on general CPU, using TensorFlow Lite with XNNPack
  - Developed Auto Tiering AI model for the Infortrend storage systems and accelerated at least 60% IO performance.
    - Implemented an classification model to predict the files are accessed in the future period but the specification of predicting a day is too long to get only 80% accuracy maximum
    - Implemented a regression model to predict files' temperature and improve at least 60% IO performance of the storage system

- **Patere Technologies, Inc.**, Taipei, Taiwan

  Computer Vision Engineer, Nov. 2020 - Jan. 2021

  - Confidence and speech fluency detection
    - Detected the speech fluency and confidence of the candidate or interviewer

        - Designed and developed a rule-based project with basic speech features
        - Optimized accuracy of the method about 10% through the more complex and useful features which served for ML/DL, such as MFCC, FBank features
    - Focus detection
        - Designed and Implemented the algorithm to check the candidate is focusing or not
        - Rule-based method: accuracy, precision, and recall - 80% on the testing dataset

- **Lenovo Group Ltd, Lenovo Research**, Beijing, China

  Computer Vision and AI Algorithm Intern, Aug. 2019 - Nov. 2019

    - Developed automatic training system for commodity detection for unmanned stores, analyzed the results to find the reason resulted in low detect success rate
    - Increased the success rate of commodity detection about 20% through collecting and generating more complicated and suitable data

- **Zero Zero Robotics**, Beijing, China

  Computer Vision and AI Algorithm Intern, Nov. 2018 - Aug. 2019

    - Involved in Hover 2 drone development
        - Researched and developed correlate filter and template matching Algorithms, and used CF method into the tracking function
        - Implemented, maintained and optimized long-term object tracking function
        - Increased the success rate of object tracking function by 15%, and CPU utility decreased by 5% through adding constraints and modifying object re-identification strategy

Competition

- **IBM Watson Build Competition: Clothes Master**

  Team Leader, May 2018 - June 2018

    - **2nd place in China**
    - Implemented a personal dress recommendation web which based on IBM Watson chatbot
    - Designed software architecture and main functions, and implemented most of them

Project

- **Design and Implementation of Real-time Long-term Single Person Tracking System**

  Individual Work, Nov. 2019 - April. 2020

    - Divided the tracker into three states to facilitate the design and implementation
    - Developed several strategies to make person tracker real-time and long-term stable
    - Tracking successful rate is 79.02%. Recall is 77.54%. FPS on computer CPU is 12.87

- **2D Anime Charactors Recognition**

Team Leader, May 2018 - June 2018

- To recognize the anime character by the same character but different styles
- Utilized the trained LBPcascade to detect anime faces and recognize them through fine-tuning Inception-v3 model
- **TOP1 result is 73.25%**

Skills

- Programming Language: Python, C/C++, Java, R
- Other: Git, GDB, Docker, pdb, Kubernetes