Tianyu Sun

CONTACT INFORMATION

Computer Science Graduate Student
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EDUCATION

University of California, San Diego, La Jolla, CA, USA
M.S., Computer Science **Sept. 2019 – June 2021(Expected)**

University of Science and Technology Beijing, Beijing, China
B.E., Computer Science **Aug. 2015 – June 2019**

RELEVANT PROFESSIONAL EXPERIENCE

Tencent AI Lab
Research Intern **Dec. 2018 – Aug. 2019**

- Worked on developing a robust and efficient system for generating realistic videos with generative adversarial networks. Proposed a stat-of-the-art face reenactment model. Used PyTorch with a 3-researcher team.
- Participated in Virtual Host project, which aims at generating a virtual host for game streaming and weather broadcasting. Developed modules for face segmentation and alignment. Used NumPy and OpenCV with a 4-engineer team.

National Laboratory of Pattern Recognition
Institute of Automation, Chinese Academy of Sciences
Research Intern **June 2017 – Sept. 2018**

- Proposed a method of increasing the accuracy of gait recognition by heightening the frame rate with generative adversarial networks, which achieved a performance comparable to state-of-the-art model with an 8-layer base model. Used TensorFlow with a 4-researcher team. Publication can be seen in *Frame-GAN*.
- Segmented human parts of a large Person Re-ID dataset with more than a million images with DensePose. Extracted features of the images with ImageNet Pre-trained models for further research. Used TensorFlow with a 2-researcher team.

Machine Learning and Bioinformatics Laboratory
National Taiwan University of Science and Technoogy
Undergraduate Researcher **Mar. 2017 – June 2017**

- Proposed a method which combined Gaussian Process Regression (GPR) and Generative Adversarial Networks (GAN) for predicting CO_2 level and achieved 2X speed and 10X accuracy than using GAN without GPR. Used TensorFlow.
- Created a project, which employed hierarchical sampling to boost the performance, to apply this model to traffic time series prediction. Used TensorFlow.

SELECTED PROJECTS

Event Handling Module for LegoOS

- A module which handles event requests and function creation for LegoOS, a serverless platform. Provide high-performance event handling and load-balancing.
- Responsiable for data pipeline. Designed data infrastructure and implemented with Kafka and CouchDB.
- Can handle 2,000 qps based on single-node testing on AWS EC2 instance.

Applying Pre-trained Model on Recognition

- Illustrated how to apply the ImageNet pre-trained models on custom datasets with fine-tuning.
- Achieved 2.7X accuracy on a face recognition dataset with one-minute fine-tuning.
- Used TensorFlow, OpenCV, and Numpy.

SKILLS

Frameworks, Databases and Data Analysis Libraries
TensorFlow, PyTorch, OpenCV, Scikit-learn, Kafka, MySQL, MongoDB, Node.js

Programming Languages
Python, C++, C, Golang, JAVA, HTML, CSS, SQL, Haskell