# Tong Zhang

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## Education Background

**Southern University of Science and Technology (SUSTech)**  **Shenzhen, China**
*Bachelor of Computer Science and Engineering, GPA: 3.65/4*  *Sep. 2019 - June 2023*

**University of California Irvine (UCI)**  **Irvine, USA**
*Semester Exchange, GPA: 3.6/4*  *June 2022 - June 2023*

## Academic Experience

**Imitation Learning in MineRL**  **UCI**
*Advisor: **Prof. Xiaohui Xie***  *June 2022 - Sep. 2022*
PyTorch

- finetuned Video PreTraining model by Generative Adversarial Imitation Learning with Proximal Policy Optimization

**Trajectory Prediction and Driving Video Caption**  **AIR, Tsinghua University**
*Advisor: **Assistant Prof. Hao Zhao***  *May 2022 - Sep.2022*
NumPy, PyTorch

- predicted trajectory on an new interactive motion dataset by AgentFormer and Trajectron++
- trained a novel end-to-end transformer generating description and explanation of driving video
- demonstrated state-of-the-art performance in driving video captioning (Accepted by ICRA 2023)

**Facial Image Generation across Age**  **SUSTech**
*Advisor: **Associate Prof. Yu Zhang***  *July 2021 - May 2022*
PyTorch

- proposed a novel model to transform facial images continuously across age based on StyleGAN and Neural Ordinary Differential Equations (Neural ODE)
- applied an age estimator to supervise Generator and 2 losses to ensure the identity and age of face

## Project Experience

**Lightweight OCR Models Support for OpenCV**  **Google Summer of Code 2022**
*OpenCV*  *May 2022 - Sep. 2022*
PyTorch, ONNX, C++

- implemented the detection part of PP-OCRv2 model in OpenCV Zoo by ONNX
- implemented high level C++ API of PP-OCRv2 model in OpenCV
- implemented evaluation metrics of text detection (AP, Recall, Precision, Hmean) in OpenCV Zoo

**Inference Acceleration for Face Detection Models**  **SUSTech**
*C/C++ Programming and Design (CS205)*  *Nov. 2020 - Dec. 2020*
C++, AVX

- re-implemented convolutional layer, fully connected layer and pooling layer by C++ and AVX
- improved the inference speed by 60 times via replacement of operators

## Awards

- 2nd place of 2022 APAC HPC-AI Competition  *Nov. 2022*
- Outstanding Anti-COVID19 Volunteer (SUSTech)  *Apr. 2020*

## Expert Skills

- Programming Languages: C++, Python, Java
- Libraries/Software: PyTorch, NumPy, Latex