

# Tong Zhang

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🌐 [the-star-sea](https://the-star-sea.github.io)

🏠 [Homepage](#)

## Education Background

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**Southern University of Science and Technology (SUSTech)**

*Bachelor of Computer Science and Engineering, GPA: 3.65/4*

**Shenzhen, China**

*Sep. 2019 - June 2023*

**University of California Irvine (UCI)**

*Semester Exchange, GPA: 4.0/4*

**Irvine, USA**

*June 2022 - June 2023*

## Academic Experience

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**Imitation Learning in MineRL**

*Advisor: Prof. Xiaohui Xie*

**UCI**

*June 2022 - Sep. 2022*

PyTorch

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

**Trajectory Prediction and Driving Video Caption**

*Advisor: Assistant Prof. Hao Zhao*

**AIR, Tsinghua University**

*May 2022 - Sep. 2022*

NumPy, PyTorch

- predicted trajectory on a 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 (Submitted to ICRA 2023)

**Facial Image Generation across Age**

*Advisor: Associate Prof. Yu Zhang*

**SUSTech**

*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

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**Lightweight OCR Models Support for OpenCV**

*OpenCV*

**Google Summer of Code 2022**

*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**

*C/C++ Programming and Design (CS205)*

**SUSTech**

*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

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- 2nd place of 2022 APAC HPC-AI Competition
- Outstanding Anti-COVID19 Volunteer (SUSTech)

*Nov. 2022*

*Apr. 2020*

## Expert Skills

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