Hao **Sun**

MASTER STUDENT · COMPUTER VISION · MEDICAL IMAGE PROCESSING

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"Aut Caesar,aut nihil."

Summary

I am currently a master student at Tokyo Institute of Technology, supervised by Prof. Kenji SUZUKI. I received my B.Eng degree from the School of Computer Science and Technology, Zhejiang University in 2021. At that time, I am also a member of Chu Kochen Honors College. During the university, I also minored in Religious Philosophy, Zhejiang University. Now my main research interest lies in medical image processing, dose reduction for CT.

Work Experience

Fenlai Intelligent Co.,Ltd.   *ShenZhen, China*

COMPUTER VISION ALGORITHM ENGINEER (INTERNSHIP)   *Mar.2021 - Jun.2021*

- Smart gym based on computer vision technology.I am responsible for the overall architecture design and algorithm implementation of the group exercise project, and realize the multi-person real-time group exercise scoring and action correction system.
- Edge deployment of deep learning models and load balancing system.

Hikvision Co.,Ltd.   *HangZhou, China*

COMPUTER VISION ALGORITHM ENGINEER (INTERNSHIP)   *Sep.2021 - Oct.2021*

- Investigate video-based pedestrian re-identification technology.

Honors & Awards

INTERNATIONAL

2022   **IIR Research Fellow**, Institute of Innovative Research (IIR),Tokyo Institute of Technology   *Tokyo, Japan*

DOMESTIC

2018   **2rd Scholarship**, Zhejiang University   *HangZhou, China*

Research Project

3D hair modeling from 2D sketches   *Zhejiang University CAD/CG Lab*

RESEARCHER   *2020.7*

- Given a 3D bust model as reference, our sketching system takes as input a user-drawn sketch (consisting of hair contour and a few strokes indicating the hair growing direction within a hair region), and automatically generates a 3D hair model, matching the input sketch.

Virtual high dose CT image reconstruction based on paired low dose and high dose CT image   *Kenji Suzuki Laboratory*

RESEARCHER   *2021.12*

- Use paired CT images to train Massive Training Artificial Nerual Network to reduce artifacts and noise in low-dose CT images, enhance image quality, and assist doctors in diagnosis. Our main contribution is to propose a multi-scale image reconstruction method and propose a loss evaluation criterion on the latent space vector.

Fluorescence Images for Enhancing Proteins   *Kenji Suzuki Laboratory*

RESEARCHER   *2022.4*

- Fluorescent staining is a commonly used method in biology to observe the state of cells, but unfortunately most of the dyes used in fluorescent staining will affect cells (mostly lethal), which is not conducive to long-term observation of cells. We propose a method that can reconstruct the fluorescent staining map of two proteins in cells from the DIC image of the cell. Since the acquisition of DIC image is harmless to the cell, compared with the direct acquisition of the fluorescent staining map, our method enables long-term observation of some proteins in cells.

Education

ZheJiang University *HangZhou, China*

B.ENG in Computer Science and Engineering *Sep. 2017 - Jul.2021*

- Selected as a member of Chu Kochen Honors College and won the 2rd scholarship of Zhejiang University.

Tokyo Institute of Technology *Tokyo, Japan*

M.ENG in Information and Communication Engineering *Sep. 2021 - Jul.2023*

- Research Fellow from Institute of Innovative Research(IIR)