Fan Zhang

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EDUCATION

Georgia Institute of Technology — **Shenzhen, CHN**
M.S. in Electrical and Computer Engineering — *2022.8 - Present*

Soochow University — **Suzhou, CHN**
B.E. in Mechatronic Engineering — *2018.9 - 2022.6*

RESEARCH INTEREST

Deep Learning, Computer Vision.
Currently focusing on Point Cloud Understanding, and Semi-Supervised Learning for Facial Expression Recognition.
Willing to expand to other areas: Robotics, NLP, Data Mining, etc.

PUBLICATIONS

- **3D Landmark Detection on Human Point Clouds with Dual Cascade Point Transformers**
  Fan, Zhang and Qing, Li and Xiaojiang Peng
  (2nd reviewing stage) *International Joint Conferences on Artificial Intelligence*, 2023.
- **Learning Unsupervised Side Information for Zero-Shot Learning**
  Fan, Zhang
  International Conference on Signal Processing and Machine Learning, 2021.

RESEARCH EXPERIENCE

3D Human Landmark Detection on Point Clouds — *2022.9-2023.1*

- Design a Dual Cascade Point Transformer pipeline for the 3D landmark detection task.
- Create HPoint103, a new benchmark dataset consisting of point clouds with 11 labeled landmarks.
- Propose a refinement module that can be combined with other point-based methods (e.g. PointNet, PointNet++, DGCNN) to improve the performance.
- Related paper, "3D Landmark Detection on Human Point Clouds with Dual Cascade Point Transformers", is submitted to IJCAI 2023 as the first author.

Real Head-Swap based on GAN — *2022.7-2022.9*

- Leverage StyleGAN Encdoer to perform GAN Inverse and obtain the latent code of the real images.
- Take InsetGAN to replace the specified human head in the real human body image.
- Optimize the splicing area to achieve seamless splicing and unity of skin color.

Gesture Recognition with Sensor Signal — *2021.12-2022.6*

- Preprocess signal data collected by the sensor and remove noise.
- Take VGG model and implement 19 gesture recognition experiments, and the accuracy reached 90.4% when there is noise data.

Unsupervised Side Information for Zero-shot Learning — *2021.8-2021.12*

- Replace human annotated side information in supervised learning with Text Encoder in CLIP.
- Implement experiments on AWA2 and CUB datasets. The proposed method outperforms both unsupervised and supervised baselines on AWA2, and outperforms the unsupervised baseline on CUB.
- Related paper, "Learning Unsupervised Side Information for Zero-Shot Learning", is published at the International Conference on Signal Processing and Machine Learning as the first author.

COMPETITION AWARDS

- **Kaggle PetFinder.my-Pawpularity Contest**, The Silver Medal (98/3537), 2022
- **The 13th Chinese Mathematics Competition**, The Third Prize, 2021

SKILLS

Programming	LaTex, Python, Pytorch, C/C++
Languages	Chinese, English