Wentian Zhang

MPhill, Shenzhen University

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Education

- **Shenzhen University - Computer Vision Institute** Shenzhen, China
  M.S. in Computer Science *June. 2020 - July. 2023*
  - Supervisor: Prof. Feng Liu and Prof. Linlin Shen
  - Research Interests: Self-supervised Learning, Anomaly Detection and Graph Embedding

Selected Publications

1. **Zhang, W.**, Liu, H., Liu, F., Ramachandra, R., & Busch, C. (2022). Effective Presentation Attack Detection Driven by Face Related Task. **ECCV'2022**. [paper] [code]
2. **Zhang, W.**, Sun, X., Li, L., Liu, H., Liu, F., He, N., & Zheng, Y. (2022). A Multi-task Network with Weight Decay Skip Connection Training for Anomaly Detection in Retinal Fundus Images. **MICCAI'2022**. [paper] [code]
3. **Zhang, W.**, Liu, H., Liu, F., & Ramachandra, R. (2022). A Uniform Representation Learning Method for OCT-based Fingerprint Presentation Attack Detection and Reconstruction. arXiv preprint arXiv:2209.12208. [paper]
4. Liu, H., **Zhang, W.**, Xie J., Wu, H., Li, B., Zhang, Z., Li, Y., Huang, Y., Ghanem, B., & Zheng, Y. (2022). Decoupled Mixup for Out-of-Distribution Visual Recognition. European Conference on Computer Vision Workshop. **ECCVW'2022 (Equal Contribution)**. [paper] [code]
5. Liu, F., Zeng, W., **Zhang, W.**, Wang, L., Cheng, J., & Lai, Z. (2022). Multi-layered Minutiae Extraction based on Fusion-Attention for OCT Fingerprints. **IEEE T-BIOM**. [paper]
6. Liu, H., **Zhang, W.**, Liu, F., Wu, H., & Shen, L. (2021). Fingerprint Presentation Attack Detector Using Global-Local Model. **IEEE T-Cybernetics**. [paper] [code]
7. Liu, F., Liu, H., **Zhang, W.**, Liu, G., & Shen, L. (2021). One-Class Fingerprint Presentation Attack Detection Using Auto-Encoder Network. **IEEE T-IP**. [paper]

Awards, Grants & Honors

China National Scholarship (**Rate $\leq$ 0.02%**) 2022
Excellent Academic Scholarship, First Class 2021
Excellent Academic Scholarship, First Class 2020
National University Big Data Application Innovation Competition, First Place 2018

Research Experience

- **Norwegian Biometrics Laboratory (NTNU)** Gjøvik, Norway
  Collaborating with Prof. Raghavendra Ramachandra
  - Proposed a face presentation attack detector based on the taskonomy features, which is accepted by **ECCV'2022**.
- **Jarvis Lab (Tencent)** Shenzhen, China
  Internship supervised by Xu Sun & Yuexiang Li and Director: Yefeng Zheng
  - Proposed a weight decay strategy to progressively mute the skip connections of U-Net for anomaly detection task, which is accepted by **MICCAI'2022**.
  - Participated to NICO Challenge (**ECCVW'2022**), our team reach to 5th/40 in both tracks at Phase I, and 4th in Track 2 at Final Phase.
  - Proposed a robust adversarial learning method by shrinking feature space in the training phase.
- **Institute of Artificial Intelligence and Robotics for Society (CUHK)** Shenzhen, China
  Visiting student supervised by Prof. David Zhang
  - Participated to collect a multi-modal biometrics dataset, which contains face, fingerprint and palmprint samples from 10k subjects.
  - Proposed to apply a 3D convolution network to extract palmprint features which can be further encoded for recognition.
- **Computer Vision Institute (Shenzhen University)** Shenzhen, China
  M.S. in Biometrics Group supervised by Prof. Feng Liu and Prof. Linlin Shen
  - Proposed a uniform representation learning method for OCT-based Fingerprint anti-spoofing and Recognition.
  - Proposed a minutiae extraction model with fusion-attention mechanisms for multi-layered OCT fingerprints.
  - Proposed to establish a one-class framework for OCT based PAD. This work is accepted by **IEEE TIP**

Skills

- Programming languages: `Python` (preferred), `C/C++`, `HTML/CSS`
- Library/Toolkit: `PyTorch`, `Tensorflow`, `OpenCV`
- Tools: `Vim`, `Git`, LaTeX