

# YUCHI LIU

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[liuyvchi.github.io](https://liuyvchi.github.io)

## Education

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- Doctor of Philosophy**, Australian National University Mar 2021 – Now  
College of Engineering, Computing and Cybernetics, Supervisor: Dr. Liang Zheng
- Master of Philosophy** Australian National University Mar 2019 – Mar 2021  
College of Engineering and Computer Science, Supervisor: Dr. Liang Zheng
- Bachelor of Software Engineering (Honours)** Australian National University Mar 2017 – Dec 2018  
College of Engineering and Computer Science, Supervisor: Prof. Tom Gedeon

## Work Experience

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- Baidu, Vision Technology Group** *Research intern* May 2022 – Jun 2023  
↔ Supervisor: Dr. Yifan Sun *Beijing*  
• Research Topic: Model Risk Estimation
- Microsoft Research Asia, Multimedia Group** *Research intern* Feb 2022 – July 2022  
↔ Supervisor: Dr. Jinglu Wang *Beijing*  
• Research Topic: Visual Object Segmentation
- JD.com, AI Lab** *Algorithm intern* Aug 2019 – Mar 2020  
↔ Supervisor: Dr. Hailin Shi *Beijing*  
• Research Topic: Face Recognition
- Australian National University, CECS** *Course tutor* Feb 2019 – Jun 2019  
↔ Supervisor: Prof. Tom Gedeon *Canberra*  
• My work involves: Tutoring and Marking for the course COMP4660.
- CloudWalk Technology, Computer Vision Lab** *Algorithm intern* Nov 2017 – Feb 2018  
• Research Topic: Model Pruning

## Publications

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- [1] **Liu, Yuchi**, Zhongdao Wang, Xiangxin Zhou, and Liang Zheng. A study of using synthetic data for effective association knowledge learning. *MIR*, 20(2):194–206, 2023.
- [2] **Liu, Yuchi**, Zhongdao Wang, Tom Gedeon, and Liang Zheng. How to synthesize a large-scale and trainable micro-expression dataset? In *ECCV*, pages 38–55. Springer, 2022.
- [3] **Liu, Yuchi**, Hailin Shi, Hang Du, Rui Zhu, Jun Wang, Liang Zheng, and Tao Mei. Boosting semi-supervised face recognition with noise robustness. *TCSVT*, 32(2):778–787, 2021.
- [4] **Liu, Yuchi**, Yue Yao, Zhengjie Wang, Josephine Plested, and Tom Gedeon. Generalized alignment for multimodal physiological signal learning. In *IJCNN*, pages 1–10. IEEE, 2019.
- [5] Yue Yao, Josephine Plested, Tom Gedeon, **Liu, Yuchi**, and Zhengjie Wang. Improved techniques for building eeg feature filters. In *IJCNN*, pages 1–6. IEEE, 2019.
- [6] **Liu, Yuchi**, Heming Du, Liang Zheng, and Tom Gedeon. A neural micro-expression recognizer. In *FG*, pages 1–4. IEEE, 2019.

## Awards

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- 1<sup>st</sup> place of the recognition challenge of the Second Facial Micro-expression Grand Challenge (MEGC2019). **2019**
- The Scholarship for Outstanding Students, Chongqing University. **2015**

## Projects

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- Unsupervised Model Risk Estimation** *Manager: Dr. Yifan Sun* **Aug 2022 – Aug 2023**
- Ranking models based on their estimated risks with respect to out-of-distribution data.
- Visual Object Segmentation** *Manager: Dr. Jinglu Wang* **Feb 2022 – Aug 2022**
- Investigating the memory management challenge in the semi-supervised visual object segmentation task.
- Synthetic Data for Multi-Object Tracking** *Supervisor: Dr. Liang Zheng* **Aug 2020 – Nov 2021**
- Building an engine to synthesize multi-object tracking data with controllable factors.
  - Analysing and understanding the impact factors for multi-object tracking based qualitative analysis.
- Fine-grained Personal Re-identification** *Supervisor: Dr. Liang Zheng* **Sep 2020 – Oct 2021**
- Penetrating from the face recognition system to the personal re-identification system.
- Semi-supervised Face Recognition** *Manager: Dr. Hailin Shi* **Aug 2019 – Mar 2020**
- Enhancing the model's robustness against noisy pseudo-labels in semi-supervised face recognition.
- Improve Micro-expression Recognition by Synthetic Data** *Supervisor: Dr. Liang Zheng* **Feb 2019 – Mar 2022**
- Synthesizing a large-scale micro-expression recognition dataset by investigating the effective components that constitute micro-expressions.
  - Investigating the computational properties of micro-expression recognition.
- Semantic Alignment of Physiological Signals** *Supervisor: Prof. Tom Gedeon* **Feb 2018 – Nov 2018**
- Individual Honours Project for a Bachelor's Degree.
  - Semantically aligning sub-elements from different physiological signals in the same feature space.

## Pants

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- Multi-network model training method, image annotation method and face image recognition method. **2020**
- Training method and device of machine learning model, face recognition method and device. **2020**

## Skills

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- Programming skills** Python, C++, C#, Java, Database, Linux, L<sup>A</sup>T<sub>E</sub>X, Unity
- Research Skills** Machine learning, deep learning, data processing & analysis, and academic writing
- Languages** Chinese, English, Southwestern Mandarin
- Sports** Fitness, swimming, billiards