Xiao **Zhang**

Curriculum Vitae

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Research Interests

Here is my key research question: How to advance the development of scalable AI perception systems that can effectively address diverse machine learning issues in naturalistic settings? To achieve this end, I am keen on exploring robust representation learning pipelines that are both flexible and powerful. This entails a comprehensive study of general representation employing methodologies such as optimization, statistics, and high-performance computing systems to overcome challenges presented by defective data (large-scale, unlabeled, and ill-posed).

Areas Representation learning, computer vision, large-scale self-supervised learning, multi-view fused perception, high-performance real-time AI system

Working Experiences

10/2023 - Present **Postdoc Researcher**, *University of Pennsylvania*
- Advisor: Prof. Konrad Kording

12/2020 - 02/2023 **Co-Founder & Technical Head**, *Fitlab*
- Streamline the process from academic research to real-world product.
- Establish and lead the AI R&D team to develop a quasi-real-time scalable commercial motion capture and human-object interaction analysis system based on multi-view sparse 3D reconstruction.

Education

09/2019- 02/2023 **The Chinese University of Hong Kong**, *Hong Kong*
Ph.D. in Multimedia Lab, Department of Electronic Engineering.
Advisors: Prof. Xiaogang Wang, Prof. Hongsheng Li.

09/2013- **Tianjin University**, *Tianjin, China*

06/2017 B.Eng. in Computer Software Engineering.
Major: Software Engineering; Minor: Finance

First-authored Publications

CVPR21 Refining pseudo labels with clustering consensus over generations for unsupervised object re-identification
Xiao Zhang, Yixiao Ge, Yu Qiao, Hongsheng Li

ECCV20 RBF-Softmax: Learning deep representative prototypes with radial basis function softmax
Xiao Zhang, Rui Zhao, Yu Qiao, Hongsheng Li

CVPR19 P2sgrad: Refined gradients for optimizing deep face models
Xiao Zhang, Rui Zhao, Junjie Yan, Mengya Gao, Yu Qiao, Xiaogang Wang, Hongsheng Li

CVPR19 Adacos: Adaptively scaling cosine logits for effectively learning deep face representations **(Oral)**
Xiao Zhang, Rui Zhao, Yu Qiao, Xiaogang Wang, Hongsheng Li

ICCV17 Range loss for deep face recognition with long-tailed training data
Xiao Zhang, Zhiyuan Fang, Yandong Wen, Zhifeng Li, Yu Qiao

Research Experiences

07/2021 - 07/2022 **Research Intern**, *Nvidia*
- Worked on self-supervised representation learning with Dr. Charles Cheung.

07/2018 - 07/2019 **Research Assistant**, *The Chinese University of Hong Kong*
- Advisor: Prof. Hongsheng Li

07/2017 - 07/2018 **Research Intern**, *SenseTime Research*
- Worked on large-scale face representation with Dr. Rui Zhao and Dr. Junjie Yan

07/2016 - 07/2017 **Visiting Student**, *SIAT, Chinese Academy of Sciences*
- Advisor: Prof. Yu Qiao

Academic Services

Journal Reviewer, *(20+ times)*
- International Journal of Computer Vision (IJCV)
- IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)
- Neurocomputing
- Computer Vision and Image Understanding (CVIU)

Conference Reviewer, *(Selected)*
- 2024 The International Conference on Learning Representations (ICLR)
- 2023 Annual Conference on Neural Information Processing Systems (NeurIPS)
- 2023 IEEE International Conference on Computer Vision (ICCV)
- 2023 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2022 European Conference on Computer Vision (ECCV)
- 2022 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2021 IEEE International Conference on Computer Vision (ICCV)
- 2021 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2020 European Conference on Computer Vision (ECCV)
- 2020 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2019 IEEE International Conference on Computer Vision (ICCV)
- 2019 IEEE International Conference on Robotics and Automation (ICRA)
- 2019 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)
- 2018 IEEE Conference on Computer Vision and Pattern Recognition (CVPR)

Honours and Awards

2019-2022 CUHK Research Graduate Fellowship

2017-2018 The First Place in 2018 NIST-FRVT 1:N Face Recognition Track

2014-2015 Outstanding Undergraduate Scholarship of Tianjin University

2014-2015 The First Prize of Intel Cup

Teaching Experiences

Teaching assistant of the following courses at CUHK:

Fall 2022	ENGG 2030 Signals and Systems
Spring 2022	ENGG 5202 Pattern Recognition
Fall 2021	ENGG 2030 Signals and Systems
Spring 2021	ENGG 2030 Signals and Systems
Fall 2020	ENGG 2030 Signals and Systems
Spring 2020	ENGG 2030 Signals and Systems
Fall 2019	ELEG 5760 Machine Learning for Signal Processing Applications
Fall 2019	ENGG 2030 Signals and Systems

Technical Skills

Research Tools

- PyTorch, OpenCV, Caffe, OpenGL

Develop Tools

- Model Deploying: Nvidia Triton, TensorRT, NCNN, ONNX;
- Container Tools: Docker, K8S;
- High-Performance Tools: Kafka, Apache Arrow, ROS2, FastDDS, FFmpeg, DeepStream, Apache AirFlow, Jenkins
- Programming: Python, C++, C#, Go