Kai Yi (William)

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EDUCATION

King Abdullah University of Science and Technology (KAUST) *Sep 2020 - Present*
MS/PhD Candidate of Vision-CAIR, supervised by Prof. Mohamed Elhoseiny
Research Interests: Zero-/Few-Shot Learning, Unsupervised Learning, Vision and Language

Xi'an Jiaotong University (XJTU), Xi'an, China *Aug 2015 - Jun 2019*
Bachelor of Software Engineering, Overall GPA: 85.49/100
Thesis: Accurate Object Detection and Weakly-Supervised Perception in Complex Scenes, supervised by Prof. Nanning Zheng and rated as A+ (Top 1%)

RESEARCH EXPERIENCE

Tencent AI Lab Dec 2020 - Present
Research Intern, supervised by Dr. Jiaxiang Wu Shenzhen, Guangdong
- Develop machine learning algorithms for bioinformatic data.

King Abdullah University of Science and Technology May 2020 - Present
Research Assistant, supervised by Prof. Mohamed Elhoseiny
- Design creativity-driven losses and generative models for ZSL. Transformer-based image captioning.

Carnegie Mellon University Feb 2020 - Present
Research Intern, supervised by Prof. Min Xu
- Understand and analyze Cryo-ET data by using machine learning.

National University of Singapore Apr 2019 - Sep 2019
Research Intern, advised by Prof. Angela Yao Singapore
- Develop sequential methods for single RGB image based 3D pose estimation in videos.

Sensetime Group Limited Mar 2019 - Jun 2019
Research Intern with Dr. Wentao Liu Beijing, China
- Develop accurate & fast object detection methods for commercial embedded chips.

Institute of Artificial Intelligence and Robotics July 2017 - Feb 2019
Research and Engineering Intern with Prof. Nanning Zheng Xi'an, Shaanxi
- Cognition-based accurate small object detection for autonomous driving.

PUBLICATIONS

[1] VisualGPT: Data-efficient Image Captioning by Balancing Visual Input and Linguistic Knowledge from Pretraining. Jun Chen, Han Guo, **Kai Yi**, Boyang Li, Mohamed Elhoseiny. *arXiv*, 2021.

[2] Unsupervised Domain Alignment based Open Set Structural Recognition of Macromolecules Captured by Cryo-Electron Tomography. Yuchen Zeng, Xiangrui Zeng, **Kai Yi**, Jie Jin, Jing Zhang, Yi-Wei Chang, Yang Ge, Min Xu. *Submitted to ICIP*, 2021.

[3] Learning To Disentangle Semantic Features From Cryo-ET with 3D Spatial Generative Network. **Kai Yi**, Yungeng Zhang, Jianye Pang, Xiangrui Zeng, Min Xu. *Under submission*, 2021.

[4] 3D-DENet: Data-Efficient *in situ* Detection of Macromolecules in Cryo-Electron Tomograms, **Kai Yi***, Jianye Pang*, Xiangrui Zeng, Lufan Chang, Jing Zhang, Min Xu. *Submitted to ISMB*, 2021.

[5] CIZSL++: Creativity Inspired Generative Zero-Shot Learning. Mohamed Elhoseiny, **Kai Yi**, Mohamed Elfeki. *Submitted to T-PAMI.*

[6] Experimental Analysis of Legendre Decomposition in Machine Learning. Jianye Pang, **Kai Yi**, Wanguang Yin, Min Xu. *Technical Report*, 2020.

[7] Feature Selective Small Object Detection via Knowledge-based Recurrent Attentive Network. **Kai Yi**, Zhiqiang Jian, Shitao Chen, Nanning Zheng. *arXiv*, 2019.

[8] Affine LBG for Codebook Training of Univariate Linear Representation. Tiannan Dong, Jianji Wang, Meng Yang, **Kai Yi**, Nanning Zheng. *IEEE Global Conference on Signal and Information Processing (GlobalSIP)*, 2018.

[9] Cognition-based Deep Learning: Progresses and Perspectives. **Kai Yi**, Shitao Chen, Yu Chen, Chao Xia, Nanning Zheng. *Artificial Intelligence Applications and Innovations (AIAI)*, 2018 (Oral).

PROJECTS

[1] Learning Unseen Classes with Deviation Losses. **Kai Yi**. CS394D: Comteporary Topics in Machine Learning, Final Project, 2020.

[2] Hierarchical Conceptual Rotation of Mental Knowledge Representation. **Kai Yi**, Feng Yu, Liang Zhao, Tingting Han. *Project: Final-term Paper of Social Psychology*, 2018.

[3] Personalized Speech Synthesis System for Alleviating Loneliness of Old People (CN). **Kai Yi**, Xinyu Jiang, Shuanghe Yu, Jianye Pang. *Project: National Undergraduates Innovation Project, rated as* 'Excellent', 2018

TEACHING & SERVICES

Reviewer:	WACV21, BMVC20, ITSC20-18, IV18, TNNLS
Teaching Assistant:	Introduction to Machine Learning (XJTU Undergraduate Course)
	Computer Architecture (XJTU Undergraduate Course)

AWARDS & HONORS

- Outstanding Graduates of XJTU (top 5%). 2019
- Zeng Xianzi Scholarship (37/4100, top 0.9%) 2016-2018
- Candidate of 6th Excellent Student Model of XJTU (6/37) 2018
- Outstanding Leader of the Students' Union (top 2%) 2016
- Excellent Student Award (top 5%) of XJTU 2016-2018

ACTIVITIES

- Volunteer of NeurIPS 2020 Dec 2020

ADDITIONAL INFORMATION

Skills: Proficient in Python, TensorFlow, Pytorch and Android Developments, Master C++
Hobbies: Fond of long-distance running and reading classical German philosophy works