Yijiang (William) Li

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Education

Johns Hopkins University　　　　　　　　　　　　　　　　　**Jan. 2023 – Present**
M.S.E. in Data Science　　　　　　　　　　　　　　　　　　　　　*Baltimore, MD*
- GPA: 4.0 /4.0

South China University of Technology　　　　　　　　　　　**Sep. 2018 – Jul. 2022**
B.E. in Computer Science　　　　　　　　　　　　　　　　　　　*Guangzhou, China*
- GPA: 3.73 /4.0
- 2018-19 Scholarship
- Outstanding Thesis Awards

The Affiliated High School of South China Normal University　　　**Sep. 2015 – Jul. 2018**
High School Diploma　　　　　　　　　　　　　　　　　　　　　*Guangzhou, China*

Work in Progress

- <u>**Li Y**</u>, Ren S, Deng W, et al. Novel Domain Extrapolation with Large Language Models (Under review of **ECCV2024**)
- Liu H, Aditya, <u>**Li Y**</u>, H. Wang, et al Exploring the Nullspace of Vision Transformers (Under review of **ICLR2024**)
- <u>**Li Y**</u>, Shen Y, H. Wang Disentangled Meta-knowledge for Out-of-Distribution Federated Generalization (**ICML2024** Submmision)

Publications

Preprint
- <u>**Y. Li**</u>, Y. Gao, and H. Wang, "Understanding adversarial transferability in federated learning," arXiv preprint arXiv:2310.00616, 2023.

Publications
- <u>**Y. Li**</u>, X. Wang, L. Yang, L. Feng, W. Zhang, and Y. Gao, "**Diverse co-training makes strong semi-supervised segmentor**," in Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**), pp. 16055–16067, 2023.
- S. Huang, <u>**Y. Li**</u>, C. Chen, L. Shi, and Y. Gao, "**Multi-metrics adaptively identifies backdoors in federated learning**," in Proceedings of the IEEE/CVF International Conference on Computer Vision (**ICCV**), pp. 4652–4662, October 2023.
- <u>**Y. Li**</u>, W. Cai, Y. Gao, C. Li, and X. Hu, "**More than encoder: Introducing transformer decoder to upsample**," in 2022 IEEE International Conference on Bioinformatics and Biomedicine (**BIBM**), pp. 1597–1602, IEEE, 2022.
- X. Wang, X. Yang, S. Zhang, <u>**Y. Li**</u>, L. Feng, S. Fang, C. Lyu, K. Chen, and W. Zhang, "Consistent-teacher: Towards reducing inconsis- tent pseudo-targets in semi-supervised object detection," in Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 3240–3249, 2023. (Highlight 2.5%)
- X. Xie, <u>**Y. Li**</u>, Y. Gao, C. Wu, P. Gao, B. Song, W. Wang, and Y. Lu, "**Weakly supervised object localization with soft guidance and channel erasing for auto labelling in autonomous driving systems**," **ISA transactions**, vol. 132, pp. 39–51, 2023.

Internship

Radiology and Radiological Science, Johns Hopkins Medicine | *Research Assistant*　　**May. 2023 – Sep. 2023**
- Synthesizing high-resolution vessel Wall MRI for visualization of Lenticulostriate Arteries
- Implement training and inference pipeline for PD to WIP modality conversion.
- Implement UNet, CGAN, Cycle GAN as baseline methods.
- Propose and implement condiction DDPM for PD to WIP modality conversion.

Sensetime Research | *Researcher*　　　　　　　　　　　　　　　　**Jul. 2021 – Nov. 2022**
- Change detection in remote sensing reaching 80% in precision and recall.
- Reproduce several SOTA papers in semantic segmentation and remote sensing.
- Research: sample efficiency (self-supervised, semi-supervised and weakly supervised learning).

Webank | *Machine Learning Engineer*　　　　　　　　　　　　　　**Jun. 2020 - Sep. 2020**
- Public Sentiment and Risk Control Project: text analysis based on big data, distributed training, and Hadoop clusters.
- Train an NLP model on web-crawled news text based on bert, xgboost, etc. and build a textual processing system based on Hadoop clusters; conduct spam classification and sentiment analysis.
- Iteratively improve the trained spam classification model with real-time data and problems.

Research Assistantship

Computer Science, Johns Hopkins University   **Baltimore, MD**
Prof. Alan L. Yuille | CCVL Research Group   *Jun. 2023 – Present*
- Explore generative pre-training for unifying uni-modal and multi-modal data.
- Explore shortcut bias in large vision language models.

School of infomation Science, University of Illinois Urbana-Champaign   **Remote**
Prof. Haohan Wang | DREAM Lab   *Jul. 2021 – Present*
- Research: adversarial and robustness of deep learning and federated learning.
- Put forward ultra fast fgsm and explore the transferability of adversarial examples under federated settings.
- Explore the cross-bias generalization problem under federated settings.

Computer Science, University of Cambridge   **Remote**
Prof. Pietro Liò   *Fed. 2021 – Apr. 2021*
- Research: deep reinforcement learning.
- Reproduce Q-learning, Sarsa, REINFORCE, DQN, DDPG, and Policy Gradient(open source on https://github.com/williamium3000/).
- Reproduce AlphaGo on Gobang.

Computer Science, South China University of Technology   **Guangzhou, China**
Prof. Ying Gao | Computer Vision Lab   *Sep. 2020 – Jul. 2021*
- Research: weakly supervised object localization (WSOL), medical image segmentation.
- Co-write ***Introduction to Computing Ecosystem***: writing of the recent development of foreign middleware and the introduction of several outstanding middlewares (published).
- Solution for Intestinal Cleanliness: build and train a Convolutional Neural Network (CNN) based fined-grained classification model achieving 93% accuracy with ensemble learning (currently used in one of the major hospitals in Guangzhou).

Teaching

EN.553.436/636 Introduction to Data Science (Graduate / Undergraduate)   **Fall2023**
Teaching Assistant   *Johns Hopkins University*
CS 601.482/682 Machine Learning: Deep Learning (Graduate / Undergraduate)   **Fall2023**
Course Assistant   *Johns Hopkins University*

Honors and Awards

- The 2020 Contemporary Undergraduate Mathematical Contest in Modeling **First Prize**
- The 3rd Zhong Qing Bei National Mathematical Contest in Modeling (undergraduate group) **Second Prize**
- The 10th MathorCup Mathematical Modeling Challenge (undergraduate group) **Third Prize**
- The 2020 May Day Mathematical Contest in Modeling **First Prize**
- The 2020 Mathematical Contest in Modeling (MCM/ICM) **H (Second Prize)**
- The 9th Asia and Pacific Mathematical Contest in Modeling (APMCM) **S (Third Prize)**
- Robotmasters Contest in South China University of Technology **Top 16**

Extracurricular / Miscellaneous

Football Varsity Team, School of Computer Science and Engineering
Vice Captain & On-field Coach
- 2020 "Golden Sunshine Cup" college football match **Gold Medal**.
- 2020 11th college inter-academic football league **Championship**.
- 2019 "Golden Sunshine Cup" college football match **Silver Medal**.
- 2019 10th college inter-academic football league **Second Place**.

FLTRP·ETIC Cup" English Contest
Participant
- 2020 "FLTRP·ETIC Cup" English Reading Contest (Guangdong semi-final) **Grand Prize (ranked 3rd in Guangdong Province)**.
- 2020 "FLTRP·ETIC Cup" English Reading Contest (China) **Third Prize**.
- 2018 "FLTRP·ETIC Cup" English Reading Contest (Guangdong semi-final) **First Prize**.
- 2018 "FLTRP·ETIC Cup" English Writing Contest (Guangdong semi-final) **Third Prize**.