Xingyi Yang

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RESEARCH INTEREST

- **Statistical Machine learning:** Generative modeling, Trust-worthy learning and graph learning
- **Sample-efficient learning:** Self/Weak/Semi-supervised learning and Transfer learning
- **Machine learning for Healthcare:** Medical image analysis and generation, Medical report generation

EDUCATION

National University of Singapore(NUS) — **Singapore**
PhD. SP&ML, Electrical and Computer Engineering — *Sept. 2021-Present*

University of California, San Diego(UCSD) — **La Jolla, USA**
Msc. SIP, Electrical and Computer Engineering, Jacobs School of Engineering — *Sept. 2019- Jun. 2021*
GPA: 3.68/4

Southeast University — **Nanjing, China**
B.Eng. Computer Engineering — *Sept. 2015-Jun. 2019*
GPA: 3.71/4, 88.1/100

University of Ottawa — **Ottawa, Canada**
Visiting Student, Electrical and Computer Engineering — *Jun. 2018-Sept. 2018*

PUBLICATIONS

1. **Xingyi Yang**, Muchao Ye, Quanzeng You, Fenglong Ma. *Writing by Memorizing: Hierarchical Retrieval-based Medical Report Generation*, 2021, The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing(**ACL 2021**) (long oral).
2. Wenmian Yang, Guangtao Zeng, Bowen Tan, Zeqian Ju, Subrato Chakravorty, Xuehai He, Shu Chen, **Xingyi Yang**, Qingyang Wu, Zhou Yu, Eric Xing, Pengtao Xie. *On the Generation of Medical Dialogues for COVID-19*, 2021, The Joint Conference of the 59th Annual Meeting of the Association for Computational Linguistics and the 11th International Joint Conference on Natural Language Processing(**ACL 2021**) (long).
3. Ramtin Hosseini, **Xingyi Yang**, Pengtao Xie. *DSRNA: Differentiable Search of Robust Neural Architectures*, 2021, Conference on Computer Vision and Pattern Recognition(**CVPR 2021**).
4. **Xingyi Yang**. *Kalman Optimizer for Consistent Gradient Descent*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing(**ICASSP 2021**).
5. **Xingyi Yang**, Yong Wang, Robert Laganière. *A scale-aware YOLO model for pedestrian detection*, 2020, International Symposium on Visual Computing(**ISVC 2020**) (Oral).
6. Rui Zhu, **Xingyi Yang**, Yannick Hold-Geoffroy, Federico Perazzi, Jonathan Eisenmann, Kalyan Sunkavalli, Manmohan Chandraker. *Single View Metrology in the Wild*, 2020, 16th European Conference on Computer Vision(**ECCV 2020**).

PREPRINT

1. **Xingyi Yang**, Xuehai He, Jinyu Zhao, Yichen Zhang, Shanghang Zhang, Pengtao Xie. *COVID-CT-Dataset: A CT Scan Dataset about COVID-19*, 2020, arXiv:2003.13865.
2. Xuehai He*, **Xingyi Yang***, Shanghang Zhang*, Jinyu Zhao, Eric Xing and Pengtao Xie. *Sample-Efficient Deep Learning for COVID-19 Diagnosis Based on CT Scans*, 2020, medRxiv 2020.04.13.20063941.

RESEARCH EXPERIENCE

Learning and Vision Lab, National University of Singapore — **Supervisor: Prof. Xinchao Wang**
Research Assistant — *May. 2021-Present*

- Explainable graph neural network.

AI-for-Healthcare Lab, UC San Diego **Supervisor: Prof. Pengtao Xie**
Research Assistant *Oct. 2019-Jun.2021*

- Differentiable search of robust neural architectures.
- Comparative study between self-supervised transfer learning and supervised transfer learning.
- Knowledge grounded generative adversarial network for X-rays generation from radiography reports.
- Sample-efficient diagnosis of COVID-19 based on CT slices with self-supervised transfer learning.

Rose-ML-Lab, UC San Diego **Supervisor: Prof. Rose Yu**
Research Intern *Jul. 2020-Jun.2021*

- Design a neural spatiotemporal point process model for irregularly sampled spatiotemporal event forecasting.

Pennsylvania State University **Supervisor: Prof. Fenglong Ma**
Research Intern *Jul. 2020-Jun.2021*

- Propose to incorporate hierarchical information retrieval to automatically learn both report and sentence-level templates from the data in the medical report generation process.

Manmohan Chandraker's Lab, UC San Diego **Supervisor: Prof. Manmohan Chandraker**
Research Intern *Dec. 2019-March. 2020*

- Recover object height and camera parameters through weakly supervised geometric constraints.
- Implement a probabilistic graphical model for 3D geometry estimation from single image as baseline.

VIVA Lab, University of Ottawa **Supervisor: Prof. Robert Laganière**
Research Assistant *Jun. 2018-Sept. 2018*

- Design scale-aware YOLOv3 model to solve the scale variation for pedestrian detection.
- Implement MobileNet-YOLOv3 and conduct comparative study of one-stage object detectors on face detection.

Image Processing Lab, Southeast University **Supervisor: Prof. Yining Hu**
Research Assistant *May. 2018-Jun. 2019*

- 3D skull-to-face reconstruction from CT slices using Wasserstein generative adversarial network.
- One-stage remote sensing arbitrary-oriented object detection.

PROFRSSIONAL EXPERIENCE

Sensetime Research & Shanghai Artificial Intelligence Lab **Shanghai, China**
Research Intern *From April. 2021*

- Maintain the codebase of OpenMMlab.
- Semi-supervised learning.

Kneron, Inc **La Jolla, USA**
Deep Learning Intern *Oct. 2019- Jan. 2020*

- Post-training 8-bit quantization of neural network.

ArcSoft Technology Co., Ltd. **Nanjing, China**
Deep Learning Intern *Mar. 2019- May. 2019*

- Single-image super-resolution based on semantic segmentation prior.

Chongqing Yiwoke Science Technology Development Co., Ltd. **Chongqing, China**
Java development intern *Jul. 2017- Sept. 2017*

- Back-end development of Tianpeng bidding platform.

AWARDS AND CERTIFICATES

- 12th/2519 place(Defence) on IJACI-19 Alibaba Adversarial Vision Challenge
- 4th place on Alibaba AI Security Program
- 2018 MCM/ICM Meritorious Winner Prize
- China College Students' Entrepreneurship Competition National Silver Award

Academic Services

- Co-organizer, Workflow Chair, of NeurIPS 2020 Workshop: Self-Supervised Learning - Theory and Practice
- Journal Reviewer for IEEE Journal of Biomedical and Health Informatics (JBHI), Expert Systems With Applications (ESWA)
- Conference Reviewer for ICCV(2021), CVPR(2021), IJCAI(2021), ECAL(2022), ICASSP(2020)