Xingyi Yang

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RESEARCH INTEREST

- **Sample-efficient learning:** Self-supervised learning, Weak-supervised learning and Transfer learning
- **Generative models:** Generative adversarial network, Point process, Probabilistic graphical model
- **Robust learning:** Adversarial attack and defense, Domain adaption
- **Machine learning for Healthcare:** Medical image analysis and generation, Medical report generation

EDUCATION

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**. *Kalman Optimizer for Consistent Gradient Descent*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing(**ICASSP 2021**).
2. **Xingyi Yang**, Yong Wang, Robert Laganière. *A scale-aware YOLO model for pedestrian detection*, 2020, International Symposium on Visual Computing(**ISVC 2020**) (Oral).
3. 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**).
4. Xiao Xu*, **Xingyi Yang***, Yijun Chen*, Yining Hu, Lizhe Xie and Zheng Wang. *Information Redundancy Minimization for Adversarial Defense*, 2019 in **Macao**, The International Joint Conference on Artificial Intelligence, Artificial Intelligence & Business Security Workshop(**IJCAIW 2019**).

PREPRINT

1. **Xingyi Yang**, Muchao Ye, Quanzeng You, Fenglong Ma. *Writing by Memorizing: Hierarchical Retrieval-based Medical Report Generation*, 2020, Under Review For ACL 2021.
2. Ramtin Hosseini, **Xingyi Yang**, Pengtao Xie. *DSRNA: Differentiable Search of Robust Neural Architectures*, 2020, arXiv:2012.06122, Under Review For CVPR 2021.
3. Zihao Zhou*, **Xingyi Yang***, Xinyi He, Ryan Rossi, Handong Zhao, Rose Yu. *Neural Point Process for Forecasting Spatiotemporal Events*, 2020, Under Review For ICML 2021.
4. **Xingyi Yang***, Xuehai He*, Yuxiao Liang, Yue Yang, Shanghang Zhang, Pengtao Xie. *Transfer Learning or Self-supervised Learning? A Tale of Two Pretraining Paradigms* 2020, arXiv:2007.04234.
5. **Xingyi Yang**, Nandiraju Gireesh, Eric Xing, Pengtao Xie. *XRayGAN: Consistency-preserving Generation of X-ray Images from Radiology Reports*, 2020, arXiv:2006.10552.
6. **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.
7. 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*, 2020, arXiv:2005.05442, Under Review for ACL 2021.
8. 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

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

- 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-Present*

- Design a novel Neural Spatiotemporal Point Process model for irregularly sampled spatiotemporal event forecasting, which integrates deep neural networks with spatiotemporal point processes.

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

- 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, China**
Research Intern (***Remote***) *From Feb. 2021*

- Research Intern for maintaining OpenMMlab.

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)
- Conference Reviewer for ICCV(2021), CVPR(2021), IJCAI(2021), ICASSP(2020)