Xingyi Yang

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RESEARCH INTEREST

- **Efficient learning:** Transfer learning and Self/Weak/Semi-supervised learning
- **Statistical Machine learning:** Generative modeling, Trust-worthy learning (interpretability and robustness)
- **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*

Southeast University — **Nanjing, China**
B.Eng. Computer Engineering — *Sept. 2015-Jun. 2019*

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

SELECTED PUBLICATIONS

1. **Xingyi Yang**, Jingwen Ye, Xinchao Wang. *Factorizing Knowledge in Neural Networks*, 2022, 17th European Conference on Computer Vision(**ECCV 2022**).
2. Zihao Zhou, **Xingyi Yang**, Ryan Rossi, Handong Zhao, Rose Yu. *Neural Point Process for Learning Spatiotemporal Event Dynamics*, 2022, 4th Annual Learning for Dynamics Control Conference(**L4DC 2022**).
3. **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*).
4. Ramtin Hosseini, **Xingyi Yang**, Pengtao Xie. *DSRNA: Differentiable Search of Robust Neural Architectures*, 2021, Conference on Computer Vision and Pattern Recognition(**CVPR 2021**).
5. **Xingyi Yang**. *Kalman Optimizer for Consistent Gradient Descent*, 2021, IEEE International Conference on Acoustics, Speech and Signal Processing(**ICASSP 2021**).
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*

- Deep transfer learning through knowledge factorization and knowledge reassembly.

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*

- 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 generate high-fidelity medical report through hierarchical template retrieval.

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*

- 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

ByteDance **Singapore**
Research Intern *May. 2022-Now*

- Transfer learning and model resuse.

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

- Maintain the codebase of OpenMMlab.
- Semi-supervised object detection and image recognition.

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

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

AWARDS AND CERTIFICATES

- National University of Singapore, Graduate Research Scholarship.
- 2th place on CVPR 2022 CLVision Challenge Track 2&Track 3.
- 12th/2519 place(Defence) on IJACI-19 Alibaba Adversarial Vision Challenge.
- 4th place on Alibaba AI Security Program.
- 2018 MCM/ICM Meritorious Winner Prize.

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), Pattern Recognition (PR), IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- Conference Reviewer for ICML, NeuIPS, CVPR, ICCV, ECCV, IJCAI, ICASSP