Xingyi Yang

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RESEARCH INTEREST

- **Knowledge Efficiency:** Transfer learning and Model Reuse.
- **Data Efficiency:** Self/Weak/Semi-supervised learning and Learning with synthetic data.
- **Statistical Machine learning:** Generative models, Diffusion Models, Trust-worthy learning.

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**, Xinchao Wang
   Diffusion Model as Representation Learner
   International Conference on Computer Vision(**ICCV 2023**).
2. **Xingyi Yang**, Daquan Zhou, Jiashi Feng, Xinchao Wang
   Diffusion Probabilistic Model Made Slim
   Conference on Computer Vision and Pattern Recognition(**CVPR 2023**).
3. Xinjiang Wang*, **Xingyi Yang***, Shilong Zhang, Yijiang Li,
   Litong Feng, Shijie Fang, Chengqi Lyu, Kai Chen, Wayne Zhang
   Consistent-Teacher: Towards Reducing Inconsistent Pseudo-targets in Semi-supervised Object Detection
   Conference on Computer Vision and Pattern Recognition(**CVPR 2023**) * Contributed Equally. (**Highlight**).
4. **Xingyi Yang**, Daquan Zhou, Songhua Liu, Jingwen Ye, Xinchao Wang
   Deep Model Reassembly
   Conference on Neural Information Processing Systems(**NeurIPS 2022**) (**Paper Award Nomination**).
5. **Xingyi Yang**, Jingwen Ye, Xinchao Wang
   Factorizing Knowledge in Neural Networks
   European Conference on Computer Vision(**ECCV 2022**).
6. **Xingyi Yang**, Muchao Ye, Quanzeng You, Fenglong Ma.
   Writing by Memorizing: Hierarchical Retrieval-based Medical Report Generation
   Annual Meeting of the Association for Computational Linguistics(**ACL 2021**) (**Long Oral**).
7. **Xingyi Yang**
   Kalman Optimizer for Consistent Gradient Descent
   IEEE International Conference on Acoustics, Speech and Signal Processing(**ICASSP 2021**).

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.
- Diffusion-based generative models.

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

- Sample-efficient diagnosis of COVID-19 based on CT slices with self-supervised transfer learning.
- Differentiable search of robust neural architectures.
- Comparative study between self-supervised transfer learning and 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*

- Generate high-fidelity medical reports 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.

PROFRSSIONAL EXPERIENCE

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

- Efficient diffusion-based Generative model.
- Supervisor: Dr. Jiashi Feng

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

- CVPR 2023 Travel Grant.
- NeurIPS 2022 Top Reviewer.
- 2th place on CVPR 2022 CLVision Challenge Track 2&Track 3.
- National University of Singapore, Graduate Research Scholarship.
- 12th/2519 place(Defence) on IJACI-19 Alibaba Adversarial Vision Challenge.
- 2018 MCM/ICM Meritorious Winner Prize.

Academic Services

- Co-organizer, Workflow Chair, of NeurIPS 2020 Workshop: Self-Supervised Learning - Theory and Practice.
- Journal Reviewer TIP, PR, TCSVT, JBHI, JVCI, ESWA.
- Conference Reviewer for ICML, NeurIPS, CVPR, ICCV, ECCV, IJCAI, ICASSP.