LUMING TANG

lt453@cornell.edu http://hal9000.space

EDUCATION

Cornell University, Department of Computer Science Jan.2019-Present
Ph.D. in Computer Science
Advisor: Prof. Bharath Hariharan
Research Interests: Computer Vision and Machine Learning

Tsinghua University, Department of Physics Sep.2014-Jun.2018
B.S. in Mathematics and Physics
Second Major in Economics

PUBLICATIONS AND MANUSCRIPTS

Davis Wertheimer*, **Luming Tang***, Bharath Hariharan. "Fine-Grained Few-Shot Classification with Feature Map Reconstruction Networks"(*equal contribution), *Tech Report in submission.*

Luming Tang, Davis Wertheimer, Bharath Hariharan. "Revisiting Pose-Normalization for Fine-Grained Few-Shot Recognition", in *Conference on Computer Vision and Pattern Recognition* (CVPR 2020).

Luming Tang, Yexiang Xue, Di Chen, Carla P. Gomes. "Multi-Entity Dependence Learning with Rich Context via Conditional Variational Auto-encoder", in *AAAI Conference on Artificial Intelligence* (AAAI 2018).

Zhongdao Wang*, **Luming Tang***, Xihui Liu, Zhuliang Yao, Shuai Yi, Jing Shao, Junjie Yan, Shengjin Wang, Hongsheng Li, Xiaogang Wang. "Orientation Invariant Feature Embedding and Spatial Temporal Regularization for Vehicle Re-identification"(*equal contribution), in *International Conference on Computer Vision* (ICCV 2017).

Luming Tang, Boyang Deng, Haiyu Zhao, Shuai Yi. "Hierarchical Deep Recurrent Architecture for Video Understanding". in *CVPR 2017 Workshop on Youtube-8M Large-Scale Video Understanding.*

EXPERIENCE

Cornell University, Research Assistant May.2019-Present
Advisor: Bharath Hariharan

- Working on learning with less label for computer vision in general and few-shot learning in particular.
- Reformulated few-shot classification as a reconstruction problem in latent space, proposed a novel mechanism by regressing directly from support features to query features in closed form without introducing any new learnable parameters, which is more performant and efficient than previous approaches.
- Revisited pose normalization for fine grained few-shot recognition problem and showed that with a minimal increase on model capacity, it could improve performance significantly for multiple different learning algorithms and network backbones.

Microsoft Research Asia, Research Intern Sep.2018-Dec.2018
Mentor: David Wipf

- Analyzed the regularization balance of Autoencoder-structured models in general and VAEs in particular. This leads to useful practical prescriptions and demonstration of high-quality, diverse generation results from Autoencoder-structured, non-adversarial training on high-resolution images.

Cornell University, Research Intern Jun.2017-Sep.2017
Advisor: Carla Gomes

· Created a variational auto-encoder based algorithm to model structured multi-entity distribution, achieved better performance on two real-world applications compared to previous state-of-the-art approximate inference based methods.

SenseTime, Research Intern Dec.2016-Jun.2017
Mentor: Shuai Yi

· Combined an orientation-invariant embedding with spatio-temporal regularization to double matching accuracy on four vehice re-identification datasets.
· Developed a deep recurrent architecture for video understanding. The first-author paper was accepted by CVPR Video Understanding Workshop.

Tsinghua University, Research Assistant Sep.2016-Jun.2018
Advisor: Zhiyuan Liu

· Worked on natural language processing problems in general and relation extraction tasks in particular.
· Helped develop OpenNRE: an open-source framework for neural relation extraction. Code is available at THUNLP Github homepage (2700 stars, 800 forks).

TEACHING EXPERIENCE

CS4787 Principles of Large-Scale Machine Learning, Teaching Assistant	Spring 2019
CS2110 OOP and Data Structures, Teaching Assistant	Summer 2019
CS6670 Graduate Computer Vision, Teaching Assistant	Fall 2019

SELECTED AWARDS

Star of Tomorrow (awarded for distinguished internship), Microsoft Research Asia	Dec. 2018
Distinguished Academic Innovation Award, Department of Physics, Tsinghua (2/100)	Oct. 2017
Academic Talent Program Scholarship, Tsinghua	Dec. 2014
First Prize in National Physics Olympiad Competition, ranked 11-th in Henan Province	Sep. 2013

ACADEMIC SERVICES

Reviewer: CVPR 2021

SKILLS

Python, PyTorch, TensorFlow, LaTeX