LUMING TANG

(+1)607-262-1117 lt453@cornell.edu or happyallen24@gmail.com http://hal9000.space

EDUCATION

Cornell University, Department of Computer Science Jan.2019-Present
Ph.D. in Computer Science
Advisor: Prof. Bharath Hariharan

Tsinghua University, Department of Physics Sep.2014-Jun.2018
B.S. in Mathematics and Physics, Rank: 4/47
Double Major in Economics

PUBLICATIONS AND MANUSCRIPTS

- Bin Dai, **Luming Tang**, David Wipf. "On the Regularization Balance in Autoencoder-Based Generative Models". *has been submitted to Thirty-sixth International Conference on Machine Learning (ICML 2019).*
- **Luming Tang**, Yexiang Xue, Di Chen, Carla P. Gomes. "Multi-Entity Dependence Learning with Rich Context via Conditional Variational Auto-encoder". in *Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18).*
- 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". in *IEEE International Conference on Computer Vision (ICCV 2017).* (***** indicates equal contribution)
- **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.*

RESEARCH EXPERIENCE

Visual Computing Group, Microsoft Research Asia Sep.2018-Dec.2018
Mentor: David Wipf, Lead Researcher

· Investigated on the disentanglement problem for generative models especially VAE-based models. Reproduced sevearal popular methods including β-VAE, β-TCVAE.

· Analyzed the regularization balance of Autoencoder-structured models in general and VAEs in particular, including local minima properties and necessary energy function characteristics. This leads to useful practical prescriptions and the first demonstration of high-quality, diverse generation results from Autoencoder-structured, non-adversarial training on high-resolution images. The paper has been submitted to ICML.

Computational Sustainability Lab, Cornell University Jun.2017-Sep.2017
Advisor: Carla P. Gomes, Professor in Department of Computer Science

· Used satellite data to track human footprint and analyze geographic features in the Amazon rainforest.

· Proposed the user embedding method to learn users' expertise and recover real species distribution in New York State from the original crowdsourcing data that contained noise and incorrect labels.

· Proposed a variational auto-encoder based algorithm to model structured multi-entity distribution, achieving better performance on two real-world applications compared to previous state-of-the-art approximate inference based methods and classifier chains. The first-author paper was accepted by AAAI.

Research Department, SenseTime Group Limited Dec.2016-Jun.2017
Mentor: Shuai Yi, Senior Research Scientist in Recognition and Detection Group

· Explored vehicle re-identification problem and proposed orientation invariant embedding together with spatial-temporal regularization. The model doubled the matching accuracy of previous methods on four publicly available datasets. The co-first-author paper was accepted by ICCV.
· Researched video understanding problem and proposed the deep recurrent architecture, achieving significant performance in Kaggle Youtube-8M challenge. The first-author paper was accepted by CVPR Video Understanding Workshop.

Natural Language Processing Lab, Tsinghua University Sep.2016-Jun.2018
Advisor: Zhiyuan Liu, Assistant Professor in Department of Computer Science and Technology

· Researched the neural relation extraction problem and proposed a word level and sentence level combined attention based GRU neural network model to improve the state-of-the-art performance.
· Constructed an open-source framework OpenNRE for neural relation extraction with labmates. The code was released on THUNLP Github homepage, receiving over 1300 stars and 400 folks.
· Constructed a high-quality relation extraction dataset with rich relation types by linking Wikipedia and Wikidata through the distant supervision method.

TEACHING

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

TALKS

Rich Context Based Video Understanding Sep. 2017
talk at Disney Research Pittsburgh (hosted by Dr. Boyang Li) and the Informedia Lab at Carnegie Mellon University (hosted by Prof. Alex Hauptmann).

When Deep Learning Met Computational Sustainability Sep. 2017
final presentation during internship at Computational Sustainability Lab, Cornell University

PATENTS

- A Deep Neural Network Based Vehicle Re-Identification Technology Using Regional Landmark. Inventors: Shuai Yi, Zhongdao Wang, **Luming Tang**, Junjie Yan, Xiaogang Wang. *Chinese Patent Application Number: CN201710507778.5*
- A Deep Learning Based Hierarchical Recurrent Architecture For Video Understanding. Inventors: Shuai Yi, **Luming Tang**, Boyang Deng, Haiyu Zhao, Junjie Yan, Xiaogang Wang. *Pending*

SELECTED SCHOLARSHIPS AND AWARDS

Distinguished Technological Innovation Scholarship (2/100)	Oct. 2017
Second Prize (Top3) in Freescale Cup of Intelligent Car Design Competition	Dec. 2015
First Prize of Summer Social Practice of Tsinghua University	Oct. 2015
First Prize (Top2) in TI Cup of Intelligent Car Design Competition	Jun. 2015
Academic Talent Program Scholarship of Tsinghua University	Dec. 2014
First Prize in Chinese Physics Olympiad Competition	Sep. 2013