

Ruotian Luo

CONTACT INFORMATION

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RESEARCH INTERESTS

Computer Vision, Deep Learning, Natural Language Processing, Machine Learning

EDUCATION

Toyota Technological Institute at Chicago, Chciago, IL.

- 3rd year Ph.D. Student in Computer Science **September, 2015 - present**
- Advisor: Greg Shakhnarovich

Shanghai Jiao Tong University, Shanghai, China.

- B.Eng. in Computer Science(IEEE Honor Class) **September, 2011 - June, 2015**

HONORS AND AWARDS

National Scholarship, Ministry of Education, 2012 (Top 4%)

Academic Excellence Scholarship (Second-Class), Shanghai Jiao Tong University, 2012-2014 (Top 10%)

XinDong Scholarship (Second-Class), XinDong Co. Ltd., 2013 (Top 5%)

2014 The Interdisciplinary Contest in Modeling: **Finalist** (Top 11/1028)

RESEARCH EXPERIENCE

Research Intern, Adobe Research

Mentors: Scott Cohen, Brian Price

- Image Captioning: incorporated a discriminability objective into captioning training loss to generate more discriminative and more descriptive image captions (submitted to CVPR 2018).

Research Assistant, Toyota Technological Institute at Chicago

Advisor: Greg Shakhnarovich

- Research topic: interaction between vision and language, in particular grounding of image descriptions with visual attention; joint learning of image-level detection and image captioning.
- Referring expressions generation: proposed two approaches to utilize models trained for referring expression comprehension task to generate better referring expressions (published in CVPR 2017).

Research Assistant, Shanghai Jiao Tong University

Advisor: Yuncai Liu

- Person re-identification: apply multi-view pictorial structures methods to jointly predict pedestrian poses and viewpoints to improve person re-id results.
- 3D pose reconstruction: use pictorial structures based 2D human pose estimation as a preprocessing for 3D pose reconstruction.

Summer Research Intern, University of Ottawa

Advisor: Robert Laganière

- Use computer vision methods to time how long every customer spend on waiting for the food in fast food restaurant (i.e. from paying the money to getting the food).
- Accelerate existed upper-body detection algorithm by CPU and GPU parallel methods.
- Use SDALF, a re-id algorithm, to re-identify two same customers in different time and position, and evaluated the algorithm on our fast food restaurant dataset.

Research Assistant, Shanghai Jiao Tong University

Advisor: Xinbing Wang

- Friendship Analysis in Online Social Network using machine learning methods.
- Crawl Weibo user relationship data using Metropolis-Hasting algorithm.
- Propose a kernel multivariate survival analysis model to predict the survival of a friendship on Online Social Network, and evaluate its performance on real dataset.

PUBLICATIONS Luo, R., Shakhnarovich G., 2017, Comprehension-guided referring expressions. The IEEE Conference on Computer Vision and Pattern Recognition (CVPR).

Zhao, Y., Zhao, X., Luo, R. and Liu, Y., 2016. Person Re-identification by encoding free energy feature maps. *Multimedia Tools and Applications*, 75(8), pp.4795-4813.

Liang, S., Luo, R., Chen, G., Ma, S., Wu, W., Song, L., Tian, X. and Wang, X., 2014, December. Are we still friends: Kernel multivariate survival analysis. In 2014 IEEE Global Communications Conference (pp. 405-410). IEEE.

TEACHINGS *Teaching Assistant* **September, 2016 - December, 2016**
TTIC 31020, Introduction to Statistical Machine Learning, Autumn 2016.

SOFTWARE PROJECT **Campus news recommendation system, Core Member** **March, 2013 - July, 2013**
Develop an Android APP which crawls the news from campus website or BBS etc., and recommends news of users' interests.

IAMHungry GO AI, Team leader **December, 2013-January, 2014**
Develop a computer go AI based on UCT and Monte Carlo algorithm.

Object tracking system on Smart Robot Car, Core Member **July, 2014**
Build a tracking system on Smart Robot Car based on TLD algorithm.

PATENTS **Intelligent taxi scheduling system**, CN103680128A **January, 2014**
Inventors: Tianyuan Liu, **Ruotian Luo**, Yang Zhang, Feng Yang, Xiaoying Gan, Xiaohua Tian, Xinbing Wang

SKILLS

- Languages: C, C++, Python, Lua, MATLAB, Java, PASCAL, L^AT_EX, SQL, PHP.
- Deep Learning Tools: PyTorch, Torch7, Tensorflow.