TAO KONG

BASIC INFORMATION

- Homepage: `https://taokong.github.io`
- Google Scholar: `https://scholar.google.com/citations?user=kSUXLPkAAAAJ&hl=en`
- Github: `https://github.com/taokong`
- Email: taokongcn@gmail.com Phone: (+86)-18710113786

- Main research: *Computer Vision, Deep learning, Instance Level Recognition, Object Detection*

EDUCATION

University of Pennsylvania, Philadelphia, USA *2018.10 - now*
Visiting scholar in GRASP Lab, expected 2019.03

Tsinghua University, Beijing, China *2014.09 - now*
Ph.D in Computer Science & Technology, expected 2019.07

Shandong University, Jinan, China *2010.09 - 2014.06*
B.Eng. in Computer Science & Technology

SELECTED PUBLICATIONS

— **Tao Kong**, Fuchun Sun, Huaping Liu, Wenbing Huang. Deep Feature Pyramid Reconfiguration for Object Detection, **ECCV** 2018.

  — A novel architecture reconfiguring the feature hierarchy in a flexible yet effective way: global attention and local reconfiguration.

  — The models achieve consistent and significant boosts compared with other state-of-the-arts.

— **Tao Kong**, Fuchun Sun, Anbang Yao, Huaping Liu, Yurong Chen, Ming Lu. RON: Reverse Connection with Objectness Prior Networks for Object Detection, **CVPR** 2017.

  — We Propose reverse connection to traditional convolutional networks to enable the network to detect objects on multi-levels in real-time!

  — Utilizing objectness prior to reduce the searching space of objects.

  — The **1st place of 2016 IROS Robotic Grasping and Manipulation Competition** based on RON and HyperNet!

  — **Code**: `https://github.com/taokong/RON`, 320+ stars, 130+ forks, 40+ citations.

— **Tao Kong**, Anbang Yao, Yurong Chen, Fuchun Sun. HyperNet: Towards Accurate Region Proposal Generation and Joint Object Detection, **CVPR** 2016 (***Spotlight Presentation***).

  — The Hyper Features well incorporate deep but highly semantic, intermediate but really complementary, and shallow but naturally high-resolution features of the image.

  — Adding Hyper Features to Faster R-CNN achieves **42.0 AP on COCO object detection task**, which outperforms the winner of MS COCO 2016!

  — **190+ citations** according to Google Scholar and the idea has been successfully used in PVANet (one of the top lightweight deep neural networks), winner of the MS COCO 2017 pose estimation task (`https://arxiv.org/abs/1711.07319`), and pedestrian detection (`https://arxiv.org/abs/1705.02757`).

— Di Guo, **Tao Kong**, Fuchun Sun, Huaping Liu, Object discovery and grasp detection with a shared convolutional neural network, **ICRA** 2016 (***Oral Presentation***).

— **100 *fps*** on a real robotic platform to discover and grasp a target object from the stack!

— **Tao Kong**, Gongping Yang, Lu Yang. A hierarchical classification method for finger knuckle print recognition. EURASIP Journal on Advances in Signal Processing 2014 (1), 44, 2014 (***SCI***)

— **Tao Kong**, Gongping Yang, Lu Yang. A new finger-knuckle-print ROI extraction method based on probabilistic region growing algorithm. International Journal of Machine Learning and Cybernetics 5 (4), 569-578, 2014 (***SCI***)

EXPERIENCE

Research Intern 2018.04 - 2018.08

— Microsoft Research Asia (MSRA), Beijing, China
— Advisor: Dr. Jifeng Dai
— Design computer vision algorithms to deal with large scale missing/noisy label instance-level recognition problems.

Research Intern 2015.07 - 2016.04

— Intel Labs China (ILC), Beijing, China
— Advisor: Dr. Anbang Yao
— Develop Convolutional Neural Networks to learn better representations for fast and accurate object detection.

Technology Partner 2016.07 - 2018.02

— A Machine Vision Startup
— Defect inspection systems using modern computer vision/machine learning algorithms.

Research Assistant 2014.09 - now

— Tsinghua University
— Advisor: Prof. Fuchun Sun & Huaping Liu
— Design computer vision algorithms using Deep Learning for object detection & robot grasping.

PROFESSIONAL ACTIVITIES

— Peer reviewer of TIP, CVPR 2018, IJCAI 2018, IROS 2017, AAAI 2019

AWARDS AND HONOR

— **Top 2** on PASCAL VOC 2012 leaderboard, 2016.11
— The **1st place** of 2016 IROS Robotic Grasping and Manipulation Competition, 2016.10
— Division Recognition Award (DRA): Excellence in Speed & Execution, ILC, 2016
— The **1st Price** of CUMCM(China Undergraduate Mathematical Contest in Modeling), 2014
— The CCF Outstanding Undergraduate; The IBM Outstanding Undergraduate, 2014

TECHNICAL STRENGTHS

Computer Languages	Python, C++, Java, Matlab
Programming Library	Caffe, Pytorch, OpenCV, PCL