

# TAO KONG

## BASIC INFORMATION

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- 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

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**Tsinghua University, Beijing, China**

*2014 - now*

Ph.D in Computer Science & Technology, expected June 2019

**Shandong University, Jinan, China**

*2010 - 2014*

B.Eng. in Computer Science & Technology

## SELECTED PUBLICATIONS

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- **Tao Kong**, Fuchun Sun, Wenbing Huang, Huaping Liu. 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>, 310+ stars, 120+ forks.
- **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!
  - 150+ 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!

### Previous works before Ph.d

- **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

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### *Research Intern*

2018.4 - now

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

### *Research Intern*

2015.7 - 2017.4

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

### *Technology Partner*

2016.7 - 2018.2

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

### *Research Assistant*

2014.9 - now

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

## PROFESSIONAL ACTIVITIES

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- Peer reviewer of CVPR 2018, IJCAI 2018, IROS 2017, TIP

## AWARDS AND HONOR

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- **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

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| <b>Computer Languages</b>  | Python, C++, Java, Matlab   |
| <b>Programming Library</b> | Caffe, Pytorch, OpenCV, PCL |