

# Kai Kang, PhD

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[Linkedin](#)

## Research Interests

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Deep Learning, Computer Vision, Antispoofing, Video Object Detection, Crowd Analysis

## Education

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08/2013 - 09/2017 **The Chinese University of Hong Kong**, Hong Kong

Department of Electronic Engineering

Thesis: Intelligent Video Analysis with Deep Learning

Supervisors: Prof. Xiaogang Wang and Prof. Hongsheng Li

Degree: PhD

Research area: computer vision, deep learning, video object detection

09/2009 - 07/2013 **University of Science and Technology of China**, Hefei, Anhui, China

School of the Gifted Young

Degree: B.S. in Optics with an honor degree (top 5%)

## Working Experiences

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**Apple Inc.** 03/2021-present **Staff Machine Learning Engineer & Manager**

**One Apple Park** 04/2020 - 03/2021 **Senior Machine Learning Engineer & Manager**

**Way,** 10/2018 - 04/2020 **Senior Machine Learning Engineer**

Cupertino,

CA 95014, USA

Technical lead for computer vision and machine learning algorithm development for camera related applications.

10/2017 - 09/2018 **Computer Vision & Machine Learning Engineer**

Directly responsible for Face ID antispoofing algorithm development on iPhone X, iPhone XS, XS Max and XR since iOS 11.3

## Awards & Honors

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2021 **Young Alumni Award**, 50th Anniversary of Department of Electronic Engineering, The Chinese University of Hong Kong

2020 **Outstanding Young Author Award**, IEEE Circuits and Systems Society.

2016 **Winner** (CUVideo, **first author**), **ImageNet** Large Scale Visual Recognition Challenge 2016 (ILSVRC2016), Object detection from video/track with provided data.

- 2015 **Winner** (CUVideo, **first author**), **ImageNet** Large Scale Visual Recognition Challenge 2015 (ILSVRC2015), Object detection from video with provided data.
- 2012 **Best Software Tools Project** (team leader), International Genetically Engineered Machine (iGEM) Competition World Championship, MIT, Massachusetts, USA
- 2012 **Gold Medal** (team leader), International Genetically Engineered Machine (iGEM) Competition Asia Jamboree, HKUST, Hong Kong
- 2013 First Outstanding Graduates with Honor Degrees (**top 5%**), University of Science and Technology of China
- 2012 Innovation Scholarship, Institute of Physics, Chinese Academy of Sciences

## **Publications (Google Scholar)**

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- 1 **Kang, K.**, Ouyang, W., Li, H., & Wang, X. (2016). Object Detection from Video Tubelets with Convolutional Neural Networks. CVPR, 2016. (**Spotlight**)
- 2 **Kang, K.**, Li, H., Xiao, T., Ouyang, W., Yan, J., Liu, X., & Wang, X. (2017). Object Detection in Videos with Tubelet Proposal Networks. CVPR, 2017.
- 3 **Kang, K.\***, Li, H.\* , Yan, J., Zeng, X., Yang, B., Xiao, T., ... & Ouyang, W. (2017). T-CNN: Tubelets with Convolutional Neural Networks for Object Detection from Videos. TCSVT Special Issue on Large Scale and Nonlinear Similarity Learning for Intelligent Video Analysis. (**Winning** method for ILSVRC 2015 challenge; IEEE CASS 2020 **Outstanding Young Author Award**)
- 4 **Kang, K.**, & Wang, X. (2014). Fully Convolutional Neural Networks for Crowd Segmentation. arXiv preprint arXiv:1411.4464.
- 5 Shao, J., **Kang, K.**, Loy, C. C., & Wang, X. (2015, June). Deeply Learned Attributes for Crowded Scene Understanding. CVPR, 2015 (**Oral**)
- 6 Shao, J., Loy, C. C., **Kang, K.**, & Wang, X. (2016). Slicing Convolutional Neural Network for Crowd Video Understanding. CVPR, 2016. (**Spotlight**)
- 7 Zhang, C., **Kang, K.**, Li, H., Wang, X., Xie, R., & Yang, X. (2016). Data-driven Crowd Understanding: a Baseline for a Large-scale Crowd Dataset. IEEE Trans on Multimedia.
- 8 Shao, J., Loy, C. C., **Kang, K.**, & Wang, X. (2016). Crowded Scene Understanding by Deeply Learned Volumetric Slices. T-CSVT, 2016.

## **Patents**

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- 2019/2/7 Method and system for object tracking - US20190043205A1  
Xiaogang Wang, Jing Shao, Chen-Change LOY, **Kai Kang**

- 2018/5/25 Target object detection method, apparatus and system and neural network structure  
- CN108073864A  
**Kai Kang**, Hongsheng Li, Wanli Ouyang, Xiaogang Wang
- 2018/1/19 A system and a method for predicting crowd attributes - CN107615272A  
Xiaogang Wang, Chen Change Loy, Jing Shao, **Kai Kang**
- 2017/6/27 Method and device for detecting object in video, and electronic equipment -  
CN106897742A  
**Kai Kang**, Hongsheng Li, Tong Xiao, Wanli Ouyang, Junjie Yan, Xihui Liu, Xiaogang  
Wang

### **Featured Open-source Projects (GitHub)**

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- vdetlib First open-source Python library for ImageNet object detection from video challenge
- T-CNN **Winning** project for ImageNet 2015 object detection from video challenge
- REBORN **Winning** project for iGEM 2012 Best Software Tools