

Kai Kang, PhD

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kangk.ai

Research Interests

Deep Learning, Computer Vision, 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
Degree: PhD |
| 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%) |

Awards & Honors

- 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

- 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)
- 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.

Experiences

- 02/2012 - 11/2012 Team leader of USTC-Software team participating in iGEM competition (International Genetically Engineered Machine Competition)
 Project Topic: Reverse Engineering for Biological Regulatory Networks
 Medal: Gold Medal
 Prize: **Best Software Tools Project**
- 08/2013 - 09/2017 PhD in Electronic Engineering
 Advisor: Prof. Xiaogang Wang
 Research topics: deep learning and computer vision
1. surveillance crowd analysis
 2. object detection in videos (**ImageNet VID Winner 2015, 2016**)
- 10/2017 - present Computer Vision & Machine Learning Engineer at Apple Inc.
 Directly responsible for **Face ID** antispoofing algorithm development on **iPhone X** since iOS 11.3

Featured Open-source Projects (GitHub)

- [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

Skills

- Programming Python, C, C++, MATLAB, Mathematica

