

Jianfei Yang

PHD CANDIDATE · GEEK

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Research Interests

My research focuses on developing transfer learning algorithms to enhance the generalization of deep learning models. I am interested in tackling the problem of lack of high-quality annotated data confronting various tasks. Revolving this goal, I mainly study the following topics:

- **Machine learning:** transfer learning, especially domain adaptation, multi-task learning, few-shot learning
- **Computer vision:** visual recognition under challenging circumstances (limited annotations and noisy data such as rainy or hazy images)
- **Interdisciplinary research:** ubiquitous smart sensing based on Internet of Things (IoT), computer-aided structural and earthquake engineering, vision-based identification for animal husbandry, face expression recognition and analysis

Education

Nanyang Technological University

PH.D., SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING

Supervisor: IEEE Fellow, IFAC Fellow, Prof. Lihua Xie

Singapore

2016 - 2020

University of California, Berkeley

VISITING SCHOLAR, DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCES

California, USA

2018 - 2019

Sun Yat-sen University

B.S., DEPARTMENT OF DATA AND COMPUTER SCIENCE

Guangzhou, China

2012 - 2016

Experience

Chinese Academy of Science

COMPUTER VISION ADVISOR

- Offer professional suggestions on developing visual recognition systems and building large-scale database.

Beijing, China

April 2019 - Present

DJI

VISION ENGINEER INTERN

- Develop a high-performance yet efficient visual tracking algorithm running in the robots.

Shenzhen, China

June 2015 - Sep 2015

Honors & Awards

INTERNATIONAL

- 2019 **Winner**, IEEE CVPR 2019 UG2+ Challenge (Zero-shot Detection in Rain)
- 2018 **Winner**, PEER Hub ImageNet Challenge by Pacific Earthquake Engineering Research Center
- 2018 **Winner**, ACM ICMI 2018 Emotion Recognition Challenge
- 2018 **AAAI Travel grants 2018**, AAAI
- 2017 **Winner (1/771)**, JD Global Data Challenge (Livestock face recognition)
- 2017 **Winner (1/120)**, Buildathon of Singapore by Ministry of Education (Singapore)
- 2016 **Winner (1/20000)**, Microsoft Beauty of Programming Challenge by Microsoft Research Asia
- 2015 **Intel Prize**, HackNTU (IoT Solutions for the developing countries)
- 2015 **Meritorious Winner**, American Mathematical Contest In Modeling

Long beach, USA

Los Angeles, USA

Colorado, USA

New Orleans, USA

Beijing, China

Singapore

Shanghai, China

Taipei, China

USA

DOMESTIC

- 2019 **Winner (1/617)**, HUAWEI Cloud Garbage Recognition Challenge
- 2017 **Winner-up (2/782)**, Microsoft Imagine Cup in China
- 2016 **Winner**, China Mobile Internet of Things Hackathons
- 2015 **First Prize**, National Mobile Internet Innovation Contest
- 2015 **First Prize**, National Undergraduate IOT Design Contest by Ministry of Education (China)
- 2014 **First Prize**, Humanoid Robotics Hackathon by ALDEBARAN
- 2013 **Undergraduate First-class Scholarship (5% students)**, Sun Yat-Sen University

Shanghai

Shanghai

Guangzhou, China

Beijing, China

Wuxi, China

Shenzhen, China

Guangzhou, China

JOURNAL

Learning Gestures from WiFi: A Siamese Recurrent Convolutional Architecture

JIANFEI YANG, HAN ZOU, YUXUN ZHOU, LIHUA XIE

IEEE Internet of Things Journal (IF=9.52)

IEEE IoTJ

2018

Device-free Occupancy Sensing Platform using WiFi-enabled IoT Devices for Smart Homes

JIANFEI YANG, HAN ZOU, HAO JIANG, LIHUA XIE

IEEE Internet of Things Journal (IF=9.52)

IEEE IoTJ

2018

CareFi: Sedentary Behavior Monitoring System via Commodity WiFi Infrastructures

JIANFEI YANG, HAN ZOU, HAO JIANG, LIHUA XIE

IEEE Transactions on Vehicular Technology (IF=5.34)

IEEE TVT

2018

Unsupervised WiFi-enabled IoT Device-User Association for Personalized Locationbased Service

HAN ZOU, YUXUN ZHOU, JIANFEI YANG, COSTAS SPANOS

IEEE Internet of Things Journal (IF=9.52)

IEEE IoTJ

2018

Non-intrusive Occupancy Sensing in Commercial Buildings

HAN ZOU, HAO JIANG, JIANFEI YANG, LIHUA XIE, COSTAS SPANOS

Energy and Buildings 2017 (IF=4.50)

ENB

2017

CONFERENCE

Kervolutional Neural Network

CHEN WANG, JIANFEI YANG, JUNSONG YUAN, LIHUA XIE

CVPR 2019

2019

WiFi and Vision Multimodal Learning for Accurate and Robust Device-Free Human Activity Recognition

HAN ZOU, JIANFEI YANG, HARI PRASANNA DAS, ..., COSTAS J SPANOS

CVPR-19 Workshop

2019

Machine Learning empowered Occupancy Sensing for Smart Buildings

HAN ZOU, HARI PRASANNA DAS, JIANFEI YANG, ..., COSTAS J SPANOS

ICML-19 Climate Change Workshop

2019

Deep Recurrent Multi-instance Learning with Spatio-temporal Features for Engagement Intensity Prediction

JIANFEI YANG, KAI WANG, XIAOJIANG PENG, YU QIAO

ICMI-18

2018

Consensus Adversarial Domain Adaptation

HAN ZOU, YUXUN ZHOU, JIANFEI YANG, COSTAS SPANOS

AAAI-18

2018

Fine-grained Adaptive Location-independent Activity Recognition using Commodity WiFi

JIANFEI YANG, HAN ZOU, HAO JIANG, LIHUA XIE

IEEE WCNC-17

2016 - 2020

WiFi-based Human Identification via Convex Tensor Shapelet Learning

HAN ZOU, YUXUN ZHOU, JIANFEI YANG, LIHUA XIE, COSTAS SPANOS

AAAI-17

2017

Online Visual Tracking via Correlation Filter with Convolutional Networks

JIANFEI YANG, ZHENG LI, CHANG-DONG WANG, WEISHI ZHENG

IEEE VCIP-16

2016

Compressive Perceptual Hashing Tracking with Online Foreground Learning

JIANFEI YANG, ZHENG LI, LONG CHEN, JUAN ZHA

IEEE ROBIO-15

2015

Patents

PCT INTERNATIONAL PATENTS

- | | | |
|------|--|--------------------------|
| 2019 | Device-Free Human Identification and Device-Free Gesture Recognition , NTU | <i>PCT/US19/47049</i> |
| 2019 | Unsupervised WiFi-Enabled Device-User Association for Personalized Location-based Service , UCB | <i>PCT/US2019/033782</i> |

CHINESE PATENTS

- | | | |
|------|---|------------|
| 2018 | People Engagement Prediction by Facial Expression Recognition , Chinese Academy of Science | <i>TBD</i> |
| 2018 | Robot-aided WiFi-based Indoor Localization , personal | <i>TBD</i> |

Talks

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|------|---|-------------------------|
| 2019 | Smart Sensing based on IoT and Transfer Learning , Institute of Electronics, Chinese Academy of Sciences | <i>Beijing, China</i> |
| 2018 | Multi-task Learning for Structural Engineering , Pacific Earthquake Engineering Research Center | <i>UCLA, USA</i> |
| 2018 | Vision-based Livestock Surveillance for Husbandry and Insurance , National University of Singapore | <i>Singapore</i> |
| 2018 | WiFi-based Human Activity Recognition , IEEE WCNC 2018 | <i>Barcelona, Spain</i> |
| 2017 | Magic Mirror: An IoT and AI based Intelligent Toy , Microsoft | <i>Shanghai, China</i> |
| 2015 | Narrator: A Humanoid Robot Presenter with Markup Language , ALDEBARAN | <i>Shenzhen, China</i> |
| 2015 | SwordArt: A Real-Time AR Online Game , Huazhong University of Science and Technology | <i>Wuhan, China</i> |

Skills

- **Deep learning framework:** Pytorch, Keras, Theano, Caffe
- **Programming languages:** C++, Python, MATLAB, Scala, R, Javascript, HTML5