



## education

### master | control engineering

tsinghua university | 2015-2018

- research: deep learning optimization, human pose estimation, object detection, face detection, face alignment, face recognition.
- advisor: Lei Zhang

### bachelor | instrument and measurement science

kunming university of science and technology | 2008-2012

- concentration in control theory

## teaching

### tsinghua | student instructor

april 2018 - july 2018

Big Data class in Tsinghua University, covering the following topics

- Developed deep learning experiments for the class, including optimization methods, GAN models and object detection algorithms.
- Designed quizzes, exams, and homework for the class.

## skills

### programming languages

python • c++

### machine learning

algorithms

- Object Detection
- Human Pose Estimation
- Facial Detection and Recognition
- Deep Learning Optimization

frameworks

pytorch • tensorflow • Caffe • keras • MXNet • ONNX • TensorRT • GluonCV

deep learning deployment

Docker • Kubernetes • Jetson Xavier • Jetson Nano

### general

languages

english • chinese

software

L<sup>A</sup>T<sub>E</sub>X • photoshop

os

linux • mac • windows

## experience

### aifi inc. | research engineer

june 2018 - present

- Developed the AiFi-Detection system based on MASK-RCNN and Openpose.
- Propose and changed the AiFi-Detection System from body detection to head detection, improved more than 10% accuracy on AiFi's core product-Customer Tracking System.
- Working on new deep learning model running on edge devices.

### the hong kong polytechnic university, hongkong | research assistant

october 2016 - april 2018

- Developed PID optimizer to accelerate the training of CNNs.
- Developed the Computing-Face system (face detection, alignment, recognition).
- Developed computer vision algorithm in the construction site, published two top journals in the construction field.

### taiyuan iron and steel corporation, china | control technician

july 2012 - september 2014

- Focused on tuning the parameters of PID controller in the steel milling machine.

## publications

published/accepted

- Wangpeng An, et al., 2018: "A PID Controller Approach for Stochastic Optimization of Deep Networks" IEEE Conference on Computer Vision and Pattern Recognition *CVPR Spotlight*
- Wangpeng An, et al., 2020: "PID Controller based Stochastic Optimization Acceleration for Deep Neural Networks" *IEEE Transactions on Neural Networks and Learning Systems (TNNLS) Impact Factor:11.368*
- Yanke Hu, Wangpeng An, et al., 2020: "Faster Clinical Time Series Classification with Filter based Feature Engineering Tree Boosting Methods" *Association for the Advancement of Artificial Intelligence AAAI Workshop-2020*
- Wangpeng An, et al., 2017: "Exponential Decay Sine Wave Learning Rate for Fast Deep Neural Network Training" *VCIP oral*
- Haoqian Wang, Wangpeng An, Lu Fang and Qionghai Dai, 2018: "Magnify-Net for Multi-Person 2D Pose Estimation" *ICME oral*
- Jun Xu, Wangpeng An, et al.: "Sparse, collaborative, or nonnegative representation: Which helps pattern classification?" *Pattern Recognition, 88:679-688,2019, Impact Factor:5.898*
- Qingtao Tang, Li Niu, Y.S Wang, Tao Dai, Wangpeng An, et al., 2017: "Student-t Process Regression with Student-t Likelihood" *IJCAI*

## professional services

peer-review articles for

- Pattern Recognition
- IEEE Signal Processing Letters (SPL)
- IEEE Transactions on Image Processing (TIP)
- 2nd CEFRL workshop at European Conference on Computer Vision (ECCV) 2018

## u.s. patent under review

Tracking Persons In An Automated-Checkout Store- Shuang Liu, Long Chen, Wangpeng An, Zijie Zhuang, Ying He, Ying Zheng.