Wangpeng An

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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 • Cloud • Kubernetes• Jetson Xavier • Jetson Nano

general
languages
english • chinese
software
LaTeX• photoshop
os
linux • mac • windows

experience

tiktok inc. | senior machine learning engineer at trust & safety
sep 2021 - present

- Prototype Large Language Model Based ML/CV/Speech Multi Model to identify violation videos on the platform.

facebook, inc. |computer vision engineer at facebook ai research (fair)
dec 2020 - august 2021

- Explainable AI to open the "black box" computer vision models.
- Responsible AI to inclusive & fairness in Computer Vision.

aifi inc. | senior research engineer
june 2018 $\xrightarrow{junior}$ feb 2020 $\xrightarrow{senior}$ november 2020

- Ownership computer vision detection algorithms and services in the RGB-only auto-checkout solution (Similiar to Amazon Go with only RGB cameras deployed).
- Prototype computer vision algorithms in RGB-only auto-checkout solution (includes customer-detection + tracking and product-detection + tracking).

the hong kong polytechnic university, hongkong | research assistant
october 2016 - april 2018

- Developed PID optimizer to accelerate the training of CNNs.
- Developed the PolyU-Face system (face detection, alignment, recognition).

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., 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* %
- H.Q. Wang, Yi Luo, **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*%
- 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* %

professional services

peer-review articles for

- Pattern Recognition • IEEE Signal Processing Letters (SPL) • IEEE Transactions on Image Processing (TIP) • IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- CVPR • ECCV • ICCV

u.s. patent

Tracking Persons In An Automated-Checkout Store - Shuang Liu, Long Chen, **Wangpeng An**, Zijie Zhuang, Ying He, Ying Zheng. Patent No.:US11393213B2