

# Tengfei Zhang

(+86) 181-3816-0628 | [ztfmars@163.com](mailto:ztfmars@163.com) | [www.ztfmars.com](http://www.ztfmars.com)

Machine learning&Deep Learning | Computer Version | GAN | AIOT

## EDUCATION

University	Period	Major	Degree	GPA
Nanyang Technological University	2017.5-2018.9	Computer Control&Automation	Msc	4.31/5
Chongqing University (211&985)	2010.9-2014.6	Automaiton / Nuclear Engineering	Bachelor	3.17/4

## WORK EXPERIENCE

### Kingstar Technology Co., Ltd CV Algorithm Engineer 2019.12 - now

- Mainly be responsible for data crawling and label&segmetation annotation / obj detect & classification algorithm selection, optimization and improvement;
- Accomplished many deep learning projects both on GPU server and on AIOT(rknn3399, Neural Compute Stick);
- Take part in integrations of CV algorithms and web development;
- Help customers to install the Linux enviroment(ubuntu,debian, rknn,etc.),drives and software needed, deploy projects, and fix bugs that has been found or feedbacked;

### HuaWei Hangzhou Research Institute TVM algorithm operator developer 2019.3 - 2019.10

- Discussed with Phd Groups on develop demands and optimization of TVM operators, and updated official doc. involved;
- Accomplished, optimized, or altered about 15+ TVM operators;
- Finished involved operators' test codes for operators's perfomance, respose time, frame recall,and global graphic test,etc and passed all the test process;

### HuaWei Hangzhou Research Institute Software Developer 2018.9 - 2019.2

- Took part in a IOT project used for hilink which developed JerryScript engine and extended with function modules;
- Mainly in charge of department's repository transfer from Gitlab in Canada to Codeclub in China;
- Crawled code review's data of all departments and assisted to display on certain webpages;
- Took part in High-Confidence Project: deployed diverse jenkins enviroment and docker clusters aimed at integrating resources and improving code security and credibility.And got a team inspire award for that.

### Lu Feng Nuclear Power Co., Ltd (LFNP) Maintenance Assistant engineer in DCS 2014.6-2017.5

- Signed with [LFNP](#) of [CGN](#), but assigned to work in a nuclear power station of Hong Yan He Nuclear Power Co., Ltd. (a joint venture company of CGN) due to unfinished construction of LFNP after orientation training.
- Proposed a new method to find fault points in optical fiber communication by switching fiber cables and comparison of different fault phenomena.
- Responsible for many fault diagnosis and maintenance in communication network, I/O cards and units of the field.
- Took part in several software updates and logic changes in DCS system of Reactor Protect System.

## SKILLS

**Code Language:** python c/c++ shell

**AI Frames:** keras / pytorch / tensorflow

**Fimiliar Platform:** docker / flask / rknn3399 / Raspberry Pi / jenkins

**Knowledge:** Familiar with obj detect & segmentation / face recognition / GPU/NPU / web crawl , etc

**Blogs :** [links](#)

**Github links:** [ztfmars](#)

## PROJECTS

### *Contraband movements detect in industrial safety zone*

10/2020

- Record and alarm if it detects smoking, phone calling, not wearing of helmet in certain industrial zones
- Accomplished annotations of 2w+ images collected by web crawling, video cropping, etc.
- Improved and optimized YOLOv3 model, training process, and detect methods to expand visual distance and accuracy especilly at small object;
- Together with lightweight classification model to decrease error rate
- Used flask to accoplish webpage function, including FTP data transferm, result display online, history record,etc

### *AIOT Products from investigation to completion*

7/2020

- Considering that keras model is unsupported being transfered directly and all process is seprated and inconvenient, reformed the model transferring, encapsulated multi-piplines and maked it end-to-end, so that it would be convenient to get rknn model from keras and pytorch model
- By model qulification and mutil-threads optimization, it can achieve fps=15 using YOLOv3 on rknn3399pro with camera video streaming
- Accomplished existed projects' platform transfer and code adjustment, so that they could be run on AIOT (rknn3399pro or Neural Compute Stick)

### *Smart auto anti-dust machine*

7/2020

- Considering the poor visual condition on site and a large number of monitors needed, the succeeding objects tracking adopted the frame differential method to figure out the direction and position of moving dust trucks, normal cars, and people.
- Using lightweight classification model to recognition, and the detected dust trucks would trigger a startup of anti-dust machine
- Flash is used to realize the web page function, which is used to manually delimit the recognition area and configure the camera parameters in the background

### *Auto value detect meters for industrial instruments*

12/2019

- The traditional image processing algorithm is used to process the image of fixed-point position instrument in the factory, which can accurately realize the recognition and reading of data pointer type, liquid level type, indicator light, switch on / off, digital meter;
- Making a tool for generating target image template is convenient for users to add different types of instruments;
- In addition to processing the pictures transmitted by each camera, it also provides a web API interface, which can directly call different types of image processing algorithms and return the processing results in the specified JSON format;
- Help customers build and deploy relevant docker system environment;

## PUBLICATIONS

Tengfei Zhang, The security of smart house based on Zigbee and GPRS [J], Informatization Construction,2015,18(10):72-73  
Jingjin Huang ; Xin Zhang ; Tengfei Zhang "Transmission Power Analysis and Control of the DC Transformer in Hybrid AC/DC Microgrid" IPEC-Niigata 2018 -ECCE Asia, Niigata, 2018

## ACHIEVEMENTS

### BaiDu AI Market:

<a href="#">AIOT for Safety helmet recognition</a>   <a href="#">Equipment to detect Electric bick helmet</a>   <a href="#">Smart Instrument Meter system</a>	
Recognition Award of innovation and Entrepreneurship Competition in Hebei Province	09/2020
Inspire Award for High-confidence Project in HuaWei Hangzhou Research Institute	02/2019
<a href="#">ERI@NTU</a> Msc project sponsorship	2017-2018
A recognition letter for the performance in the project of the measuring equipment	10/2016
National Electrician Operation Certificate (Low Voltage)	08/2016
Best employee of <a href="#">LFNP</a> in 2014   Progress award in Professinal English Training   Best trainee in DCS courses;	2014-2016
As a Management Trainee, Schorlarshipped by <a href="#">CGN</a>	2013-2014