Tengfei Zhang

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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 resposible 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 custormers 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 transfering, 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:

AIOT for Safety helmet recognition | Equipment to detect Electric bick helmet | Smart Instrument Meter system

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
ERI@NTU 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 LFNP in 2014 | Progress award in Professinal English Training | Best trainee in DCS courses;	2014-2016
As a Management Trainee, Schorlarshiped by CGN	2013-2014