Yanan Zhang

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🎓 EDUCATION

Beijing Institute of Technology (BIT), Beijing, China   2013 – 2016
Master student in Computer Science (CS), expected March 2016

Qingdao University of Science and Technology, Qingdao, China   2008 – 2012
B.S. in Computer Science (CS)

👥 EXPERIENCE

Institute of Automation, Chinese Academy of Sciences China.Beijing 2016.1 – 2016.4
Algorithm Engineer for Computer Vision Intern

- Algorithm Research of Six-DOF Robotic Arm Crawling Badminton Based on Kinect Deep Visual Information;
- The Sparsity-based Collaborative Model (SCM) target tracking algorithm is improved and applied to the indoor robot tracking module to improve the accuracy of the robot tracking specific targets;
- Research for visual SLAM(ORB-SLAM);

Thoughtworks Inc. China.Beijing   2016.5 – 2017.1
C#, Angular JS, Windows, Powershell Developer

Brief introduction: Full stack engineer of offshore project.

- Use the TDD development method to maintain the original system functions and increase new business development;
- Analyze business, and communicate business logic with customers with business analyst BA and test engineer QA;

Thoughtworks Inc. India.Pune   2016.8 – 2016.9
Java, Angular JS, Mac OS Developer

Brief introduction: Thoughtworks University.

- In Thoughtworks University, exchanged and cooperated with colleagues from different countries;
- Completed one month of short-term project development, including communication with customers, agile development;
- Jion in charity activities of NGO;

Beijing YuanYiXunChi Inc. China.Beijing   2017.3 – Present
Algorithm Engineer for Computer Vision B

rief introduction: Research and develop algorithm for image enhancement and object detection.

- Image enhancement and target detection solutions in mountainous environments
- UAV detection under sky background

Image enhancement and target detection solutions in mountainous environments Project   2017.3 – 2017.7
C++, Caffe, Eigen, OpenCV, Linux B

rief introduction: Based on the existing optical equipment, enhance the imaging effect of the monitoring equipment, remove smog, rain and snow, and super-resolution enhancement for specific targets. The SSD-based target detection algorithm automatically recognizes the target in the image, and has completed image enhancement and image super Research and implementation of resolution enhancement algorithms.

- Researching and improving the existing image super-resolution image enhancement algorithm, and studying the feasibility and specific implementation scheme of image super-resolution algorithm in the wild natural scene;
- Implemented image super-resolution algorithms based on the design scheme and the existing test data, using OpenCV and Eigen third-party libraries;
- The image enhancement algorithm based on dark channel image rain and snow is studied, and the feasibility of algorithm implementation is analyzed and the specific implementation scheme is completed;
- Research on the target detection algorithm based on the SSD deep learning model, using the existing data model to optimize, complete the first phase of the pre-research project.

UAV detection under sky background Project   2017.7 – Present

C++, Caffe, Eigen, OpenCV, Windows   B

rief introduction: For the flight of drones, it will pose a security threat to important places such as civil aviation airports. It is responsible for designing and implementing algorithm detection based on computer vision, machine learning, deep learning and other technologies, using image data collected by high-resolution cameras and infrared cameras. And tracking the drones entering the controlled airspace, the first stage of algorithm design and implementation is completed, the field test results show that the recognition rate exceeds the performance of other algorithms and bidding department algorithms.

- Responsible for the overall design of the single-frame infrared image weak target detection algorithm based on super-pixel segmentation. Compared with the traditional detection algorithm, the target detection rate is improved to meet the actual needs of various complex weather;
- Based on CUDA and Eigen, responsible for real-time target detection and tracking algorithms;
- Based on the YOLO deep learning model, the weak small drone target detection model is trained to realize the target detection algorithm for the sky domain drone;
- The integrated infrared image is based on the over-segmented target detection algorithm and the visible image based on the YOLO deep learning model. The overall real-time weak target detection and tracking algorithm is designed and implemented;
- Based on the Particle Filter algorithm, the design and implementation of the weak target tracking algorithm with improved apparent features.

👥 ACADEMIC EXPERIENCE

Research on Robust Visual Tracking Algorithm Based on Dictionary Learning
China.Beijing   2014.6 – 2015.10

Brief: Based on the machine learning method, improved the existing dictionary-based learning target tracking method, and a more robust target tracking algorithm is proposed and implemented.

- Research on target tracking algorithm based on machine learning, Bayesian inference and particle filter theory;
- Multi-dictionary learning, dynamically weighs the accuracy of a given target feature and the latest target feature in the target's deformation scene;

Research on Image Super Resolution Algorithm Based on BP Neural Network
China.Beijing   2013.9 – 2014.6

Brief: Research based on BP neural network multi-frame image super-resolution algorithm, single-frame image super-resolution based on convolutional neural network.

- Summarize the existing image super-resolution algorithm based on BP neural network, realize single-frame image super-resolution algorithm based on convolutional neural network; research and improve image super-resolution algorithm based on position patch;

⚙️ SKILLS

- Programming Languages: C++ > C > Python > C#
- Platform: Linux, Windows

- More: Computer Vision, Deep Learning, vSLAM
- Languages: Chinese - native, English - Fluent

ℹ MISCELLANEOUS

- Blog: http://zhangxiaoya.github.io
- GitHub: https://github.com/zhangxiaoya