

Xiaogang Jia

☎ (+86) 18846827115 | ✉ xiaogangjia_hit@outlook.com | 🏠 xiaogangjia.github.io | 🌐 xiaogangjia



Education

Harbin Institute of Technology(HIT)

Master of Engineering in Control Engineering, School of Astronautics, 2021

- GPA: 82.49/100

Harbin, China

Sept. 2019 - PRESENT

University of California, Berkeley

Remote Research Assistant, Mechanical Systems Control Lab

- Research Topics: behavior prediction in highly interactive driving scenarios

Berkeley, USA

Jun. 2020 - PRESENT

Harbin Engineering University(HEU)

Bachelor of Engineering in Automation, School of Automation

- GPA: 90.09/100

Ranking: 15/285

Harbin, China

Sept. 2015 - Jun. 2019

Publications

- **Xiaogang Jia**, Xianqiang Yang, Huijun Gao. A Modified CenterNet for Crack Detection of Sanitary Ceramics. IECON 2020 - The 46th Annual Conference of the IEEE Industrial Electronics Society.(accepted)
- Zhihao Zhang, Xianqiang Yang, **Xiaogang Jia**. Scale-Adaptive NN-based Similarity for Robust Template Matching. IEEE Transactions on Instrumentation and Measurement, 2020.(accepted)

Research Experiences

Behavior Prediction for Autonomous Driving

Jun. 2020 - PRESENT

Advisor: Prof. Masayoshi Tomizuka, Dr. Wei Zhan, MSC Lab, UC Berkeley

- Modified **Social-Gan** to predict trajectories of vehicles.
- Proposed a new pooling method that extracts effective information in the field of view of the ego vehicle.
- Reproduced the paper "MultiPath: Multiple Probabilistic Anchor Trajectory Hypotheses for Behavior Prediction"
- Ranked **5th** at INTERPRET challenge of **CVPR 2020** workshop, "Scalability in Autonomous Driving".
- Achieved a result of ADE=0.44, FDE=1.44, MON=0.18 and ranked **1st** with MON metric.

Object Detection in Aerial Images

Feb. 2020 - Jun. 2020

Advisor: Prof. Huijun Gao, Prof. Xianqiang Yang, Machine Vision Lab, HIT

- Proposed a **point-based** network to localize objects and generate high-quality clusters.
- Implemented a detector based on **CenterNet** and **FPN** to process both original images and cropped images.
- Merged all predicted bounding boxes by standard NMS.
- Verified the model on VisDrone2019 validation set and achieved an AP of 31.09%.
- Achieved an AP of 22.72% in VisDrone Challenge of **ECCV 2020** workshop, "Computer Vision for UAVs Workshop and Challenge".

License Plate Recognition in Natural Scenes

Nov. 2018 - Jun. 2019

Advisor: Prof. Huijun Gao, Prof. Xianqiang Yang, Machine Vision Lab, HIT

- Used **YOLOv2** to detect all cars in the captured images.
- Proposed a novel **CNN** to predict a set of affine transformation parameters, which were used to extract the areas of License Plates and correct the distorted License Plates.
- Simplified the standard YOLOv2 to perform character detection.
- Achieved an accuracy of 94.5% on the established dataset.

Intelligent Monitoring System for Conveyor Belt in Coal Industry

Apr. 2019 - Dec. 2019

Advisor: Prof. Huijun Gao, Prof. Xianqiang Yang, Machine Vision Lab, HIT

- Implemented the detection for the speed of the conveyor belt based on **SURF** feature detector.
- Modified the original **YOLOv3** to perform the detection of workers, smoke and fire.
- Detected the area of the coal based on **Mask-RCNN** to make sure the normal operation of conveying coal.
- Used **template matching** to detect if the coal piling exceeds the defined height.

Skills & Others

Programming Python, C/C++, Latex

Technical Experienced with Opencv, PyTorch, Keras, TensorFlow, ROS under Ubuntu operating system

Deep Learning In depth knowledge of CNN-based Object Detection and Instance Segmentation

TOEFL Reading(29), Listening(24), Speaking(22), Writing(25), Total(100)