Zhongming Huang

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EDUCATION

Cornell University (Department of Electrical and Computer Engineering)

Master of Engineering

Tiangong University (School of Electronic and Information Engineering)

Bachelor of Engineering

GPA: 3.81/4.0

BACHELOR'S DISSERTATION

Instance Segmentation Based on Polygon Regression

Mar. 2023 - Jun. 2023

Awarded as the Excellent Graduation Thesis (highest honor)

- Aimed to use contour prediction to achieve instance segmentation task in the 2D autonomous driving scenario
- Adapted YOLOv5 prediction head with additional vectors to generate the instance's polygon contour vertices, Polar IoU Loss was used to train and evaluate the network
- Trained and tested on the Cityscapes Dataset with 31.4% Mask mAP

Relevant Coursework

Statistical Inference and Decision (in progress), Computer Vision (in progress), Graduate Topics in ECE (in progress), Linear Algebra, Machine Learning and Big Data Processing, Mathematical Modeling, Digital Signal Processing, Signals and Systems, Microcontroller, VHDL Programming, C Programming

SKILLS

Languages: C, Python, VHDL, Markdown, LATEX

Tools: Visual Studio Code, MATLAB, Ubuntu, Anaconda, Keil, Quartus, Overleaf, Visio

Framework: TensorFlow, PyTorch

Publications

Semantic Road Segmentation Based on Adapted Poly-YOLO First Author EI Indexing The 3^{rd} Int'l Conference on Signal Processing and Machine Learning	Aug. 2023
6-DoF Occluded Object Semantic Grasp Planning with De-occlusion Instance Segmentation First Author \mid EI \mid Best Presentation Award \mid The 5^{th} Int'l Conference on Intelligent Autonomous Systems	Sep. 2022
High Precision Small Hepatocellular Carcinoma Detection Using Improved EfficientNet with Self-Attention Co-first Author $ $ EI $ $ The 22^{nd} IEEE/ACIS Int'l Conference on Computer and Information Science	Sep. 2022
Fire Detection System Based on Deep Learning Quadrotor UAV First Author P.R.China Software Copyright	Sep. 2022
Dynamic Feature Extraction Using I-Vector for Video Fire Detection Co-first Author $ $ EI $ $ Best Presentation Award $ $ The 3^{rd} IEEE Int'l Conference on Pattern Recognition and Machine	May. 2022 e Learning

EVDEDIENCE

EXPERIENCE	
Excellent Engineer's Club Group Leader Hosted a 1-year provincially funded UAV fire detection research program	Sep. 2021 - Sep. 2022
Robot Lab Member Tested UAV, AUV and manipulator robots, participated in 2 competitions with Provincial Awards	Sep. 2020 - Sep. 2021
Mathematical Modeling Club Member	Sep. 2019 - Sep. 2020

Acquired fundamental algorithms, awarded 2021 COMAP ICM Contest Honorable Mention