YUHENG ZHA

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EDUCATION

UC San Diego, La Jolla, US *Incoming September 2021*
M.S. in Electrical and Computer Engineering

Zhejiang University, Hangzhou, China *September 2017 - June 2021 (Expect)*
B.E. in **Automation**, Chu Kochen Honors College
Overall GPA: 3.88/4.0, Major GPA: 3.98/4.0

RESEARCH INTEREST

Computer Vision and Video Comprehension
Machine Learning
Autonomous Driving
Action Recognition

RESEARCH EXPERIENCE

Video based Human Skeleton Extraction and Behavior Analysis *Nov 2020 - Present*
Advisor: Prof. Yu Zhang *Zhejiang University*

· Extract the human skeleton from video sequences by HRNet
· Propose an Angle Aware Multi-Branch Spatial-Temporal GCN to depict motion feature
· This work is submitted to *IEEE* FG 2021

Detection of Offensive Memes in Social Networks *July 2020 - Sept 2020*
Advisor: Prof. Dong Wang, Ph.D Lanyu Shang *University of Notre Dame*

· Create two datasets from Gab and Reddit, respectively
· Use image-only (WSCNet, ResNet) and text-only method (LR+SVM) to analyze offensiveness
· Reproduce multi-modal (BERT+VGG) method to comprehensively evaluate social posts

PROJECTS

NeurIPS Competition: INTERPRET *June 2020 - July 2020*

· Adapt Actor Relation Graph (ARG) to the vehicle trajectory model
· Predict agent's trajectory with road lines and other participants (VectorNet)
· Match Result: Average Distance Error ~ 0.28

AGV Mapping, Localization and Route Prediction *March 2020 - June 2020*

· Course: *Robot Design and Practice*
· Build an odometry by Iterative Closest Point (ICP) and Extended Kalman Filter (EKF)
· Create a probabilistic map by Occupancy Grid Mapping.
· Use Monte Carlo and Augmented Particle Filter for Localization
· Optimize the predicted route by A* and Dynamic Window Approach (DWA) algorithm.

Zhejiang University Robot Competition *May 2019 - June 2019*

- Create a dataset containing objects provided by the organizer
- Utilize Google Object Detection with MobileNet+SSD method to classify targets.
- Design a program to communicate with the actuator (Arduino Mega 2560)
- My team ranked 1^{st} in the race.

AWARDS

2020	ICM Honorable Mention
2019	First Prize in ZJU Robot Competition
2019	Third Prize in Engineering-Training Competition of ZJU

SCHOLARSHIPS

2020, 2019, 2018	Zhejiang University Second Scholarship (8%)
2020, 2019, 2018	Academic Excellence Award
2020	Research and Innovation Award
2019	International Engagement Award
2018	Student Leadership Award

TECHNICAL SKILLS

Standard Test	**TOEFL** 107=R(28)+L(24)+S(27)+W(28)
Programming Languages	C/C++, Python, Java, MATLAB
Tools and Packages	Git, Pytorch, OpenCV, Sklearn, Origin, ROS, Gazebo
Creation	Adobe Photoshop, Premiere Pro, After Effect
Typesetting	LaTeX, Typora (Markdown)