

YUHENG ZHA

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EDUCATION

UC San Diego, California, 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

Track: **Robotics**

Overall GPA: 3.88/4.0, Major GPA: 3.98/4.0

RESEARCH INTEREST

Robotics and Computer Vision

Video Comprehension

Machine Learning

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 will be submitted to CCBR 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

UAV Object Detection and Tracking

May 2019 - April 2020

Advisor: Prof. Yu Zhang

Zhejiang University

- Build a UAV simulation environment in Gazebo and create ROS communication
- Utilize AprilTag to localize the UAV and PID algorithm to track the tag
- Test on Intel Aero in a real scenario

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 Navigation

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 navigation route by A* and Dynamic Window Approach (DWA) algorithm.

Zhongkong Cup 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 system to communicate with the actuator (Arduino Mega 2560)
- My team ranked 1st in the race.

AWARDS

2020	ICM Honorable Mention
2019	First Prize in <i>Zhongkong Cup</i> Robot Competition
2019	Third Prize in College Student Robot Competition of Zhejiang Province
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
Robotics	ROS, Gazebo
Tools and Packages	Git, Pytorch, OpenCV, Sklearn, Origin
Creation	Adobe Photoshop, Premiere Pro, After Effect
Typesetting	L ^A T _E X, Typora (Markdown)