

YUHENG ZHA

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EDUCATION

Zhejiang University, Hangzhou, China

September 2017 - June 2021 (Expect)

B.E. in **Automation**, Track: **Robotics**, **Chu Kochen Honors College**

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

UC San Diego, California, US

Incoming September 2021

M.S. in Electrical and Computer Engineering

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)