Yuanhong Yu

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EDUCATION

Northwestern Polytechnical University Sep 2020 - Jun 2024

Computer Science and Technology Bachelor Computer College

- GPA:3.884 /4.1 Ranking: 18/229 (First Five Semesters)
- Comprehensive ranking: 11/228
- CET6:495

HONORS & AWARDS

2020-2021 National Scholarship	2021.12
2020-2021 First Class Scholarship for Outstanding Students of Northwestern Polytechnical University	2022.5
2020-2022 Huawei "Smart Base" Scholarship	2023.3
2021-2022 Samsung Scholarships	2022.12
ICRA Robomaster Artificial Intelligence Challenge International Third Prize	2022.6
2022 WeChat applet application development contest northwest division second prize	2022.8
The 23rd China Robotics and Artificial Intelligence Competition Artificial Intelligence Innovation Competition First Prize	2021.8
2021 China robot competition FIRA small group-simulation group 11vs11 champion	2021.6

SKILLS LIST

- I have expertise in C++, Python, Java, and other programming languages and have worked on various projects using them.
- I am skilled in Linux and ROS operating systems and can work with tools like Gazebo, CMake, OpenCV, and PCL. I also have practical experience in building and programming robots for competitions.
- I have acquired proficiency in using git as a version control tool and have demonstrated skills in leading and collaborating with teams on various projects.
- Familiar with html, css, js, vue and other languages, and have web development experience.
- During my one-year laboratory internship, I have gained extensive experience in reading academic papers and reproducing code implementations.

PROJECT EXPERIENCE

V5robot WeChat applet Mar 2022 - Sep 2022

Project leader

V5robot applet is a robot education and promotion platform with high interactivity, user-friendliness, and comprehensive content. It teaches robot theory on navigation, vision, control and more, and has small games for fun. It also recruits for the soccer robot base of Northwestern Polytechnical University.

- As the project leader, I did demand analysis, task allocation and basic work in the early stage. In the later stage, I developed the navigation, robot model display and recruit new modules. I also maintained the applet in the final stage.
- In the navigation module, I used the canvas canvas to visualize the classic global path planning algorithms.
- In the robot model display module, I leveraged threejs to accomplish the 3D model visualization of numerous robot parts and the robot as a whole.

Robomaster Artificial Intelligence Challenge Nov 2021 - May 2022

Person in charge of positioning and navigation group

The Robomaster Artificial Intelligence Challenge requires robots to perform tasks such as localization, navigation, autonomous decision-making, visual recognition, and autonomous combat.

- For the positioning module, we employ cartographer to construct maps, and use the AMCL algorithm, along with visual recognition data, for fusion localization.
- To account for the competition field environment, we installed laser radars at different heights on the robot, and fused the point cloud information obtained from multiple radars, to achieve better localization performance.
- We customized the costmap by adding the enemy robot detected by the field side sensor to the robot path and cost map,

to enable a simple robot collaborative planning, and to provide more feasible strategies for the decision-making layer.

- We conducted extensive tuning tests for the teb planner for local path planning, to ensure the speed and smoothness of the robot's actual operation.

RESEARCH EXPERIENCE

ASGO-3D Laboratory Internship Jan 2022 - Present

Since January 2022, I have done scientific research in the multi-domain and multi-dimensional information system group of the ASGO National Engineering Laboratory of Northwestern Polytechnical University, and have studied two topics.

- I reproduced a 6D0F pose estimation algorithm based on Point Pair Features (PPF), which is a method to detect 3D objects in point clouds.
- I am currently engaged in a fascinating endeavour involving the Diffusion Model.

Societies and organizational experiences

Group V5, football robot base, Northwestern Polytechnical University Mar 2021 - Present

The person in charge Positioning navigation group

- In numerous robotic contests, I oversee the creation of locational and directional components.
- As the head of V5 recruitment, he has organized recruitment activities for many times.

Northwestern Polytechnical University Software College Student Union Sep 2020 - Sep 2021

Key members Department of Culture and Sports

- During my incumbency, I orchestrated numerous cultural and athletic events.
- Won awards in many cultural and sports activities.