Yangyang Qu

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Personal Profile

Received master's degree at the University of Chinese Academy of Sciences in 2021. Solid academic research experience in machine learning, computer vision, deep learning, and the Internet of Things. Published four papers on my research area. Participated in three international competitions and was in charge of the visual part. Have a good programming foundation. Can use python and java skillfully.

Education

University of Chinese Academy of Sciences
Shenzhen, China

M.S. in Computer Science and Engineering   *Sep. 2018 - Jun. 2021*

- M.S. in Computer Science and Engineering.
- Guangdong-Hong Kong-Macao Joint Laboratory of Human-Machine Intelligence-Synergy Systems University of Chinese Academy of Sciences, Beijing, China.
- **Courses:** Digital Image Processing, Design and Analysis of Algorithms, Deep Learning and Computer Vision, etc.

China University of Petroleum(Project 211)
Qingdao, China

B.S. in the Internet of Things   *Sep. 2014 - Jun. 2018*

- B.S. in Dual Bachelor's Degree in the Internet of Things Engineering and Engineering Management.
- Third class scholarship, Outstanding student leader.
- **Courses:** Signal Analysis & Processing, Computer Network Principle, Data Structure and Algorithm, etc.

Research Experience

Research on all-weather visual navigation robot system for terminal delivery service   *Jun. 2019 - Jun. 2021*

Project Source: Major Project of Guangdong New Generation Artificial Intelligence

- Goal of this project is a vision-based, low-cost self-driving vehicle that can drive properly in all weather.
- Responsible for the problem of robot repositioning failure in case of drastic light changes. I designed an unsupervised generative adversarial network, which can realize the conversion of camera-acquired images into normal light images in low light scenes.
- In the course of the project research, I published three related articles, one of which was published in the top robotics conference ICRA.

Intelligent human-computer interaction-based imitation learning of complex operational skills   *Oct. 2018 - Jan. 2020*

Project Source: Major Project Topics of Artificial Intelligence 2030, Ministry of Science and Technology of China

- Goal of the project is to implement an intelligent wheelchair that helps people with disabilities to open doors, feed themselves and other complex actions by combining a wheelchair, a robotic arm and a camera.
- Responsible for providing information about the target before the robotic arm performs the action, using a combination of deep learning methods and traditional vision. The deep learning method is used to identify the object, and the traditional method combined with deep learning is used to determine the specific location that the robotic arm needs to reach.
- In the course of the project research, we participated in three competitions such as the robotics competition at the IROS conference and obtained some achievements.

Competition Experience

2020 World Robot Contest Finals   *Dec. 2020*

Responsible for the vision part of the robot

- Won the **first prize** in the competition.
- The tasks are the autonomous implementation of the robot to pour the medicine from a medicine bottle into a thin-mouthed bottle and the automatic assembly of blocks by the robot.
- Responsible for the vision part, the Kinect camera is combined with the robot to provide the robot with information about the bottle to be grasped and the position of the blocks.

2020 IEEE Robotics and Automation Society Service Track Competition   *Nov. 2020*

Responsible for the vision part of the robot

- Won the **third prize** in the competition.
- The task is for the robot to autonomously achieve the production of a cup of milk tea, including a series of operations such as scooping milk tea powder with a spoon, pouring water, stirring with a glass rod, and capping the bottle.
- Using the Kinect camera in combination with the robot to provide the robot with the location information of the next object to be grabbed before the robot performs each step, including the number of cups in a stack, the top and bottom of the straw, and the orientation.

2019 IEEE Robotics and Automation Society Logistics Track Competition *Nov. 2019*

Responsible for the vision part of the robot

- Won the **third prize** in the competition.
- The task is to sort and place each toy in a basket of toys.
- Responsible for the vision part, providing the robot with information on the orientation of the toys to be picked up before they are picked up, and identifying them after they are picked up to determine the placement.

2017 Weifen Electronics Internet of Things Application Design Competition *Jun. 2017*

Responsible for the vision part of the robot

- Won the **first prize** in the competition.
- The task is to help the quadrotor to stop at the specified position.
- Responsible for the quadrotor assembled for myself, in the process of flying and landing in real time to provide the quadrotor with information on the specific location to land, to guide the quadrotor can land accurately.

Work Experience

Huawei Technologies Co., Ltd. *Aug. 2021 - Now*

JAVA Development Engineer

- In the devcloud team under Huawei Cloud, I am responsible for the development of CloudPipeline product, the home page link of our product: CloudPipeline.
- Responsible for the development of access control function, the role of this function is to control the quality of the deployed code, when the number of irregularities in the code exceeds the access control indicator, the product will not be online.
- Responsible for the product's permission management function, control different roles of personnel to the product with different permissions, so as to reduce the occurrence of accidents.

Publications

Conference paper

- **Yangyang Qu**, Kai Chen, Chao Liu and Yongsheng Ou, "UMLE: Unsupervised Multi-discriminator Network for Low Light Enhancement," in 2021 IEEE International Conference on Robotics and Automation (ICRA), pp. 4318-4324.
- **Yangyang Qu**, Yongsheng Ou, and Chao Liu, "LEUGAN: Low-Light Image Enhancement by Unsupervised Generative Attentional Networks," in arXiv:2012.13322.
- **Yangyang Qu**, Yongsheng Ou, and Rong Xiong, "Low Light Enhancement by Unsupervised Network," 2020 IEEE International Conference on Real-time Computing and Robotics (RCAR), pp. 404-409
- **Yangyang Qu**, Yongsheng Ou, and Rong Xiong, "Low Illumination Enhancement for Object Detection in Self-driving," in 2019 IEEE International Conference on Robotics and Biomimetics (ROBIO), pp. 1738-1743