

Wentao Gao

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EDUCATION

University of Leicester Mechanical Engineering Bachelor of Engineering Distinction	Sep 2017 - Jun 2021
University of Bristol Robotics Master Merit	Sep 2021 - Sep 2022
University of South Australia Data Science Doctor	Jun 2023 - Jan 2027

SKILLS LIST

- Familiar with python and use python to analyze data, implement machine learning algorithms, and build deep learning networks. Understand java, C and other programming languages
- Master the basic principles of basic data structures and algorithms
- Understand matlab and skillfully use matlab to realize simple control system
- Familiar with common machine learning algorithms and use appropriate algorithms to solve problems
- Familiar with computer vision algorithm, understand open set recognition algorithm

PROFESSIONAL EXPERIENCE

Tencent Robotics researcher Robotics-X 1. This internship proposes a framework for object and robot trajectory planning based on throwing and catching tasks, and refines its kernel. The proposed framework aims to improve the efficiency and accuracy of robot trajectory planning for throwing and catching tasks. 2. During this internship, common robot trajectory planning algorithm packages, including Topp, GPS, Moveit, and Trajopt, will be tested and evaluated. The goal is to gain proficiency in these packages and identify their strengths and weaknesses when applied to different robot trajectory planning tasks. 3. This internship proposes a new framework for analyzing robot operations and investigates the idea in depth by analyzing throwing and catching motions. The proposed framework aims to provide a deeper understanding of robot operations and contribute to the organization's efforts to participate in this year's IROS. 4. This internship proposes ideas for improving robot operations through classical robot control algorithms. The proposed ideas aim to make robot operations smoother, including routine operations and obstacle avoidance task operations, as well as other operational behaviors closer to human operations.	Sep 2022 - Mar 2023 Shenzhen
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PROJECT EXPERIENCE

Open Set Recognition of pigs • Open Set Recognition of Pigs • Using target detection technology, open set recognition technology, the technical difficulty is how to improve open set recognition accuracy using metric learning appropriately • It can reach about 88% accuracy • The github address of the open set recognition project	Feb 2022 - Aug 2022
Bike rental prediction • Forecast the number of bicycles rented per day • Using linear regression, ridge regression, random forest and XGBoost algorithms, the technical difficulty is feature engineering, the data processing and find the appropriate attributes as well as hyperparameter adjustment to improve accuracy • Test set XGBoost RMSE can reach 0.36 • Bike rental prediction project github address	Feb 2022 - Jun 2022
Apple counting OpenCV implementation • The opencv method is used to detect and count apples in the image by edge detection and image sharpening • Using machine learning and computer vision methods to detect images • Compare machine learning and opencv methods, analyze and compare the corresponding results, and drafted a report	Sep 2021 - Jan 2022
Pololu 3Pi • Using C on the arduino platform to carry out embedded development of Pololu, without adjusting the external library, the car linear sensor and collision sensor are analyzed and programmed to achieve the purpose of line inspection and collision following • bangbang, proportional control and PID on 3pi. Complete the collection of experimental data, and use python to process and analyze the data. The technical difficulty lies in the realization and optimization of the control principle and the data collection affected by the development board • In straight lines and corners, collision following is realized • Pololu 3Pi project github address	Sep 2021 - Dec 2021

SUMMARY

- Strong information research ability, good at solving complicated problems, through StackOverflow/Github and other platforms to address technical problems.
- Having the spirit of serious search for problems in development, and can solve problems in a short time and understand supplementary knowledge points.
- Strictly standardize writing codes.