Fanpeng Meng (Frank)

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Education

Huazhong University of Science & Technology (HUST) — Wuhan, China
B.S. in Automation, GPA: 3.62/4.00 — Fall 2019 - Fall 2023

University of Cambridge — Cambridge, England
Summer Research Program, Grade: A+ — Summer 2021
Project: Human-tracking Robot in Crowded Situation.
Supervisor: Prof. Pietro Lio.

Experience

Academic Experience

Huazhong University of Science & Technology (HUST) — Wuhan, China
UG Research Assistant / EIC-SINC Lab — Sep 2021 - Current
Subject: Weakly Supervised Learning for Network Mode Classification and Prediction.
Supervisor: Prof. Yang Cao

Professional Experience

Suzhou Zhito Technology — Shanghai, China
Algorithm Engineer Intern / AI Lab — Jul 2021 - Sep 2021
Algorithm engineer intern for SLAM based on vision.

- Participating in the improvement of SLAM framework, introducing GCN in the generation of keypoints and descriptors, improved the process of feature matching.
- Constructing the 3D semantic map with PCL, introducing PSPNet for semantic segmentation combining with the depth image from RGB-D camera.

Changchun Yidong Clutch CO.,LID — Suzhou, China
Software Engineer Intern / Suzhou R&D Center — Jan 2021 - Mar 2021
Software engineer intern for embedded system, control system and algorithm.

- Designing part of the automatic clutch software architecture, applying the Rapid Application Develop (RAD).
- Participating in the development of automatic clutch, using Simulink to design CPD module (calculate clutch status, and the position and action information of the clutch pedal), using INCA to complete the module test and vehicle calibration.

Projects

Human-tracking Robot in Crowded Situation Jul 2021 - Sep 2021

The project is aimed at designing a human-tracking robot in crowed situation.

- Introducing *SiamPRN* for single object tracking in image sequence, introducing *PID* for distance control.
- Proposing solution for the target losing problem. Generating feature vector and find the target back by calculating the similarity of vectors, improving the robustness of the system.

Ants Rescue Nov 2021

A game project. Rescue a ant without walking into any obstacles. **Complete the project independently.** Powered by *C++* based on *QT*.

- Developing the map generation algorithm, using *Floyd's Tortoise and Hare* to judge the dead-end situation;
- Developing *BFS* to find the nearest food blocks and obstacles;
- Project link: https://github.com/mfp0610/Ants-Rescue

Domestic Robot Simulation System Jul 2020 - Oct 2020

A simulation system for a domestic robot with varieties of functions. Powerd by *Borland C++*, on *DOS*.

- Designing the functions and architecture of the project, and developing half of the functions
- Developing the path planning algorithms using *Astar*, and an express chatting robot by key word matching.
- Project link: https://github.com/mfp0610/robot-simulation

A Tightly Coupled SLAM System Based on VIO Jan 2020 - Mar 2020

The project is aimed at designing a MonoSLAM solution fushion with IMU, solving the scale uncertainties, while improving the accuracy, robustness and speed of the system.

- Responsible for the development of SLAM algorithm, applying VINS-MONO by HKUST as the solution.
- Responsible for the design of the path planning algorithm, using HybridAstar algorithm and constructing octree to realize path planning 3D, and achieving it successfully in our target vehicle.

Scholarships and Awards

- HUST Outstanding League Member 2021, 2020
- HUST Technical Innovation Scholarship 2020
- "Weipai" Seed Cup Innovative Software Algorithm **Rank2(2/174)** 2020
- HUST Renesas Cup Smart Car Competition **Rank4(4/82)** 2020
- National Olympiad in Informatics in Provinces (NOIP) **First Prize** 2018

Skills

- **Programming:** Python, C/C++;
- **Tools:** Linux, Pytorch, OpenCV;
- **Skills:** SLAM, Computer vision, Deep learning, Algorithms.

Languages

- **Chinese:** Mother Tongue
- **English:** TOFLE (83), CET-4

Extracurricular Activities

Pivot Studio Nov 2020 - Current

Pivot Studio is an enthusiastic campus Internet team, focusing on developing creative campus applications.

- As one of the **co-founders**, I organized the early preparations. Currently serving as the **caption**.
- Team Link: Project link: https://www.linkedin.com/company/pivotstudio-cn/