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EDUCATION

Southern University of Science and Technology

Shenzhen, China

School of Systems Design and Intelligent Manufacturing

Bachelor of Science in Automation

09/2022- 06/2026

- **Overall GPA:** 3.70/4.0 (88.96/100)
- **GPA of the last three semesters:** Fall 2024 : 3.86/4.0 Spring 2024: 3.76/4.0 Fall 2023 : 3.81/4.0
- **Core Curriculum:** Artificial Intelligence and Machine Learning (93), Introduction to C/c++ Programming(95), Signal and Linear System Analysis (90), Computer Networking and its industrial Application(90), Digital circuit (94), Multi-variable Control and Applications(88), Control Theory (87), etc.

RESEARCH INTERESTS

- Reinforcement Learning
- Computer Vision
- Robotics

RESEARCH EXPERIENCE

Southern University of Science and Technology

Shenzhen, China

Developer, Advisor: Prof. Kemi Ding

09/2024- now

- **Multi-Agent Task Allocation and Path Planning**

The goal of this project is to design efficient algorithms for multi-agent systems to achieve optimal task allocation and path planning in dynamic environments. This research involves the integration of game theory, optimization techniques, and multi-agent cooperation strategies.

- A hierarchical learning strategy combining reinforcement learning is proposed to address the task allocation problem in multi-agent systems. This strategy effectively reduces the complexity of the state and action spaces in reinforcement learning, thereby improving the training speed.
- A reinforcement learning method incorporating graph theory is designed to solve the task reallocation problem in multi-agent systems.

Southern University of Science and Technology

Shenzhen, China

Developer, Advisor: Prof. Kemi Ding

05/2024- now

- **3D Point Cloud Image Localization Using Semantic Segmentation**

The goal of this project is to leverage semantic segmentation techniques for accurate localization of 3D point clouds in real-world environments. This research involves exploring computer vision methods and spatial mapping algorithms.

- An end-to-end machine learning-based localization method is designed, which outputs the 6D pose of the camera by combining 2D images and 3D point clouds. By integrating computer vision and spatial mapping algorithms, this method significantly improves the localization accuracy of 2D images in real-world environments.
- 3D point cloud modeling technology is employed to expand the training dataset through virtual modeling, followed by pre-training, which effectively enhances the model's training performance.

PROJECTS

Southern University of Science and Technology

Shenzhen, China

Developer, Advisor: Prof. Kemi Ding

03/2024- 06/2024

- **Project: A Multi-Modal Method for Domain Adaptation In Point Cloud Semantic Segmentation**

The goal of this project is to apply transfer learning methods to help neural networks perform semantic segmentation of point clouds. So it involves 3 fields: multi-modal learning, point cloud semantic segmentation, and domain adaptation.

- In order to better utilize all the information of the 2D image, an adversarial training method is used, that is, a discriminator is added behind the 2D segmentation network. The discriminator receives the feature map of the 2D network and determines whether it comes from the source domain or the target domain.
- The CoSMix model can be broadly categorized into three primary components: Semantic Selection, Compositional Mix, and Training and Update, which aim at facilitate robust and adaptive point cloud segmentation across domains. Each section plays a critical role in enhancing the model's capability to generalize and perform effectively in diverse and challenging scenarios.

SKILLS

- **Programming Languages:** Python, C, C++, LATEX, JAVA
- **ML/DL Frameworks and Libraries:** Pytorch, Scikit-learn, Numpy, Matplotlib, Pandas
- **Software Tools:** Microsoft Office Suite