Yaxuan Wang

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Education

Sichuan University Chengdu, China
BS in Automation GPA 3.73 2019.09-2020.08
BS in Computer Science(Top-notch Program, 15 selected students out of 400+) GPA 3.92 2020.09-Present
Overall GPA 3.85/4 Average Score 91.43/100 IELTS 7.0(Listening 7.5, Reading 8.5, Writing 6.5, Speaking 6.0)

Skills & Courses

- Programming Languages: Python, Java, C++, JavaScript
- Mathematics: Linear Algebra, Calculus, Probability Statistics, Discrete Math, Elementary Number Theory and Algebra
- Machine Learning: Representation Learning, Deep Learning, Pattern Recognition
- Coursework: Data Structures/Algorithms, Digital Image Processing, Robotics Programming with ROS, Operating System, Theory of Computation
- Miscellaneous: MySQL, Data Analysis, Linux, Shell, Git, Latex, PyTorch, NumPy, HTML, CSS

Publications

- A Complete Reinforcement-Learning-Based Framework for Urban-Safety Perception [pdf]
  Yaxuan Wang, Zhixin Zeng, Qiushan Li, and Yingrui Deng
  ISPRS International Journal of Geo-Information 11.9 (2022): 465
- Evaluating the Perceived Safety of Urban City via Maximum Entropy Deep Inverse Reinforcement Learning [Camera-ready version in process] [pdf]
  Yaxuan Wang, Zhixin Zeng, and Qijun Zhao
  The 14th Asian Conference on Machine Learning (ACML 2022), Dec 2022, Hyderabad, India

Research

Weakly Supervised Learning Combined with Temporal Anomaly Detection **2022.05-Present**
With Prof Yang Liu and Staff Engineer Qingsong Wen *University of California, Santa Cruz and DAMO Academy*

- A novel anomaly detection approach is proposed based on the informative representation. (More details in the future paper)
- Responsible for the design of models and implementation of algorithms.
- Our method achieves satisfactory results in all selected time-series datasets compared to the previous model. Currently working on a paper that is expected to be submitted to IJCAI 2023.

Research on Urban Safety Perception using IRL and RL **2021.10-2022.06**
With Prof Qijun Zhao and Full-time Postdoctoral Qiushan Li *Sichuan University*

- Propose a novel inverse reinforcement learning (IRL) based framework to recover the reward function that can explain the evaluation pattern. Also, present a scalable state representation method for modeling the prediction problem as a Markov decision process (MDP) and using reinforcement learning to solve the problem.
- Experimental results showed satisfactory prediction performance (at least 3% improvement in F1 score) and excellent visual interpretability. It also showed that IRL has promising prospects in this field. Two papers have been accepted.

Autonomous Robot Shooting and Movement in Specific Maps **2021.09-2022.05**
With Prof Jiancheng Lv and Prof Qijun Zhao *Sichuan University*

- Use behavior trees to realize intelligent decision-making of the automatic robot based on visual perception and cost map. Use ROS2 to communicate between robotic systems. So the robot can move and shoot on a specific map.
- Responsible for decision-making and communication and served as the team leader.
- Our project won the ICRA RMUA International Third Prize.

Bird Song Recognition **2021.07-2022.09**
With Prof Qijun Zhao *Sichuan University*

- The Mel spectrograms of the processed data were put into the classification model, which uses ResNet as the backbone to classify 100 bird calls. Thus predict the bird species appearing in each test audio.
- Our results ranked 25/273 in the bird call recognition challenge, with an accuracy of 65.4% for classifying 100 bird species.

Awards

The RoboMaster 2022 University AI Challenge - International Third Prize 2022
National Scholarship ; CK Power Scholarship ; School-level first-class scholarship 2021
The 14th China University Student Computer Design Competition - National First Prize 2021
The RoboMaster University Championship - South Division First Prize 2021
The RoboMaster University League - Provincial First Prize 2021
Outstanding Student of Sichuan University 2020
Outstanding Cadre of Sichuan University Library Volunteer Team 2020