Zhixin Zeng

zhixin.zeng725@gmail.com | crimson725.github.io | Crimson725

Education

Sichuan University Chengdu, China
BEng in Electrical Engineering and Automation *Sept. 2019 – Sept. 2020*
- GPA 3.62/4.0 Average Score 87.1/100

Sichuan University Chengdu, China
BS in Cybersecurity *Sept. 2020 – Present*
- GPA 3.79 /4.0 Average Score 89.6/100

Overall GPA 3.76 /4.0 Average Score 89.1/100

Selected Publications

*: equal contribution

[1] A Complete Reinforcement-Learning-Based Framework for Urban-Safety Perception [fulltext]
Yaxuan Wang*, **Zhixin Zeng***, Qiushan Li, and Yingrui Deng
ISPRS International Journal of Geo-Information 11.9 (2022): 465
(SJR: Q1; Impact Factor: 3.388)

[2] Evaluating the Perceived Safety of Urban City via Maximum Entropy Deep Inverse Reinforcement Learning [Camera-ready version in process] [abstract]
Yaxuan Wang, **Zhixin Zeng**, and Qijun Zhao
The 14th Asian Conference on Machine Learning (**ACML 2022**), Dec 2022, Hyderabad, India
(China Computer Federation/CCF Recommended Category C Conference)

Research and Projects

Research on Urban Safety Perception Using RL and IRL Oct. 2021 – Aug. 2022
Advisor: Prof. Qijun Zhao and Full-time Postdoctoral Qiushan Li *Chengdu, Sichuan*
- Proposed a novel scalable state representation method and evaluation framework to model the problem as a Markov Decision Process.
- Used reinforcement learning (RL) to solve the decision-making problem and inverse reinforcement learning (IRL) to recover the reward function that can explain the evaluation pattern.
- Experimental results showed satisfactory performance (at least 3% improvement in F1-Score) and excellent interpretability. It also showed that IRL has promising prospects in related fields.
- Responsible for data collection, experiment environment designation, experimental comparison, and article writing.
- Two papers were accepted to **ISPRS International Journal of Geo-Information** (co-first author) and **ACML 2022** (second author).

Face Anonymization System for Videotelephony Mar. 2022 – Aug. 2022
Advisor: Prof. Peisong He *Chengdu, Sichuan*
- Served as a core developer for the project.
- Designed a novel face anonymization system for videotelephony based on StyleGAN2.
- Designed and developed the back-end of the system.

Deepfake Detection and Alert System Oct. 2021 – Aug. 2022
Advisor: Prof. Peisong He *Chengdu, Sichuan*
- Served as a core developer for the project.

- Developed a complete deepfake detection and alert system for videotelephony and short-form video softwares.
- Designed a novel method to track the transmission chain of short-form video using the digital watermark.
- Designed and developed the back-end of the detection system.
- **Project is listed as a National College Students' Innovation and Entrepreneurship Project**

Radar Signal Pattern Recognition Mar. 2021 – May. 2021
Collaborate with Chen Qian and Hua Wang *Chengdu, Sichuan*

- Applied various models and analyzed models' performance based on radar signal data to recognize the patterns of different signals.
- Responsible for data processing, experimental comparison, and article writing.
- Finished the research paper **Study on the Impacts of Feature Indexes on Intelligent Identification of Communication Modulation Mode** [link]

NLP-based Commodity Reviews Evaluation System Oct. 2020 – Oct. 2021
Advisor: Lec. Xiaodong Zeng *Chengdu, Sichuan*

- Served as a core developer for the project.
- Designed the large-scale web crawler used for data collection.
- Analyzed users' sentiment tendency towards commodities based on the collected corpus information using deep learning models.
- Designed and developed the UI and the back-end of the system.

Awards

- Third-Class Comprehensive Scholarship, Sichuan University 2020
- Outstanding Students Award, Sichuan University 2021
- Second-Class Scholarship, Sichuan University 2021

Skills & Courses

Languages: Chinese: Native, English: Fluent

Programming Languages: Python, Java, C, JavaScript, R

Mathematics: Linear Algebra, Calculus, Probability Statistics, Discrete Math, Number Theory and Abstract Algebra

Courses: Data Structures and Algorithmic, Operating System, Database System, Computer Organization and Architecture, Computer Communication and Networks

Miscellaneous: SQL, Linux, Shell, Git, LaTeX, PyTorch, HTML, CSS