

Xuan Rao

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Research Interests

Spatial-Temporal Data Mining, Reinforcement Learning, Robot Learning.

Education

University of Electronic Science and Technology of China 2023.09 - 2027.06
Ph.D., Computer Science and Technology Chengdu, China

- topic in Spatial-Temporal Data Mining and Reinforcement Learning

University of Electronic Science and Technology of China 2020.09 - 2022.06
M.S., Computer Science and Technology GPA: 3.94/4.0 Chengdu, China

- topic in Spatial-Temporal Data Mining

Southwest University 2015.09 - 2019.06
B.Eng., Computer Science and Technology GPA: 3.55/4.0 Chongqing, China

- Coursework in Machine Learning

Publications

Route Search and Planning: A Survey 2021.03 - 2021.07
Ke Li, Xuan Rao, Xiaobing Pang, Lisi Chen, Siqi Fan Big Data Research 2021

- We survey the existing research on route search and planning, define various data forms, and describe each representative article in detail in three categories: route search, trajectory search and route planning.

FOGS: First-Order Gradient Supervision with Learning-based Graph for Traffic Flow Forecasting 2021.10 - 2022.01

Xuan Rao, Hao Wang*, Liang Zhang, Jing Li, Shuo Shang, Peng Han* IJCAI 2022

- We adapt the node2vec algorithm to learn the spatio-temporal graph based on the road network and the temporal similarity graph. We visualize the traffic data and found that its data distribution is extremely irregular, and human activities tend to show a certain pattern, so we use the first-order gradient (trend) to train the model.

Graph-Flashback Network for Next Location Recommendation 2021.11 - 2022.02
Xuan Rao, Lisi Chen*, Yong Liu, Shuo Shang, Bin Yao, Peng Han* KDD 2022

- We utilize KGE algorithm to learn the representation of each node and each relation on the spatio-temporal knowledge graph (STKG). The representations are subsequently applied to learn a POI transition graph, which is incorporated into GNN and existing RNN models for recommendation.

SSAR-GNN: Self-Supervised Artist Recommendation from Spatio-Temporal Perspectives in Art History with Graph Neural Networks 2023.01 - 2023.03

Qinglin Zhang, Menghan Wang, Haiyan Wang, Xuan Rao*, Lisi Chen* FGCS 2023

- we propose a dataset of artists to analyze the similarity relationship among artists. A self-supervised learning method is proposed to build historical knowledge graph of artists, which is used to provide more accurate recommendations for artist through GNN.

Projects

Habitat Rearrangement Challenge 2022 2022.09 - 2022.11
Third-place

- The object rearrangement task requires the robot to reposition an object on the surface of a container (table) to another container surface. We use the frozen visual representation model R3M, DDPPPO algorithm and hierarchical reinforcement learning framework to train the robot, and win the third place in the competition.

Skills

- **Technical Skills:** Python , Pytorch
- **Certifications:** CET-4 , CET-6
- **Languages:** English (basic) , Mandarin (Native)

