Guanlue Li

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Education Background

Beijing University of Posts and Telecommunications Beijing, China
Master in Computer Technology (GPA: 3.38/4.00) *Sep. 2019 – Jun 2022*

Southwest Jiaotong University Chengdu, China
Bachelor in Communication Engineering (GPA: 3.68/4.00 Top 5 %) *Sep. 2015 – Jun 2019*

Related Courses: Data Warehouse& Data Mining (93) Digital Image Processing (92) Signal and System A (99)
Data Structure (96) Advanced Program Course Design (97) Digital Electronic Technique A (96)

Research Interesting

Internet of Vehicles, Multi-Agent System Decision Making, Trajectory Prediction, Graph Neural Network

Projects

Trajectory Prediction with Heterogeneous Graph Neural Network Oct. 2020 – Present
Researcher Advised by professor Jinglin Li

- Developed a trajectory prediction system to model interactions between mobile agents
- Achieved multi-modal destination prediction by VAE to generate more diverse and plausible trajectories
- Investigated the interactions between different types of mobile agents by heterogeneous transformer graph network
- Improved the calculation efficiency by distributed computing and increased the trajectory accuracy by 5.8 %

Framework for Multi-agent Trajectory Tracking, Smoothing and Forecasting May. 2020 – Sep. 2020
Researcher Advised by professor Jinglin Li

- For tracking, utilized attention mechanism to encode spatiotemporal dependencies of agents; added occlusion state during the attention association process to reason about occlusion agents
- For smoothing, used Kalman Filter to reduce data noise and provide more accurate vehicle trajectories
- For forecasting, used LSTM to predict trajectories and utilized social pool to learn interactions among agents

Q-Learning Path Planning for Multi-Agent System in Traffic Networks Nov. 2018 – May. 2019
Researcher Advised by professor Jinglin Li

- Maintained global and local Q-table to overcome the drawbacks of sub-optimal convergence and unstable Q-value
- Used Q-learning to update Q value of actions; let mobile agents submit traffic conditions to reduce congestion
- Tested how different scales of traffic, parameters, learning rate and greedy rate affect the model ability

Social Network Articles Crawl and Text Classification Based on Naive Bayes Nov. 2019 – Dec. 2019
Team leader

- Cracked the interface parameters required for ajax dynamic loading. Used proxy IP to access web pages. Analyzed the page data by regularization, html and lxml. Used the mongoDB database to store data
- Classified crawled articles by Naive Bayesian algorithm and used the TFIDF algorithm in the file text feature attribute selection
- Built an online system that takes raw texts as queries and returns classification results with almost 90 % accuracy

Internship

Users Data Analysis Jul. 2018 – Aug. 2018
Guoxinan Base *Chengdu, China*

- Built an online system that analyzes user's data and shows users' portraits; used Django to build projects
- Used HTML, CSS, JavaScript to visualize user portraits and analysis results; utilized Ajax to update web pages dynamically.

Technical Skills

Languages: Python, Matlab, C++, HTML/CSS
Plarforms/Tools: Pytorch, Deep Graph Library, Linux, OpenCV
English Capability: IELTS 6.5