Fan Jiaxin

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Education

Beijing Jiaotong University, China   Percentage: 88/100
MSc in Transportation Planning and Management   *Sep 2021 – Present*

Thesis (Tentative Title): *Emergency Decision-making Method of Urban Rail Transit based on Knowledge Graph*
Supervisor: Professor Guangyu Zhu

Nanjing Agricultural University, China   GPA: 3.65/4.5
BSc in Transportation Engineering   *Sep 2017 - Jun 2021*

Thesis: *Design And Optimization Of A Disc Brake*
Supervisor: Associate Professor Guozhu Zhao

Academic Experience

Research Assistant   Sep 2021 - Present
Beijing Jiaotong University   *Beijing, CN*

- Designed knowledge graph ontology structure for urban rail transit emergency cases and emergency plans
- Constructed the entity acquisition model integrating semantic information for urban rail transit emergency cases based on Machine Reading Comprehension (MRC) framework
- Completed the storage and visualization of knowledge in Neo4j database using Py2neo library in Python software
- Constructed prediction model of urban rail transit emergency results based on the convolutional neural network

Research Assistant   Mar 2019 - Jun 2020
Nanjing Agricultural University   *Nanjing, CN*

- Designed the system structure and working principle of the roof-greening automatic irrigation system
- Developed program of Single-Chip Microcomputer using Keil C software to control the opening and closing of the solenoid valve
- Optimized the performance of the STC89C51 Single-Chip Microcomputer through simulation using Proteus software

Work Experience

Project Assistant Intern   Sep 2022 - Dec 2022
China International Engineering Consulting Corporation (CIECC), Department of Social Services   *Beijing, CN*

- Conducted policy reviews and analyses for the "Suiyang Project," ensuring adherence to pertinent regulations and optimizing project outcomes
- Provided essential project support by collecting information, performing data analysis, and assisting in report writing, contributing to the efficient project management

Student Volunteer Experience

2018.09-2019.06: The leader of Press and Media Center, Career Development Association.
Work content: Operation of WeChat official account; Photo shoot of activities; Management of the department.
2017.09-2018.06: Member of New Media Center, Student Union, Youth League Committee of Agricultural Machinery Department
Work content: WeChat content publish; Video edit; Poster design; Photo shoot.

Research Interests

Intelligent Transportation Systems, Natural Language Processing, Deep Learning, Knowledge Graph, Data Analysis and Visualization, etc.

Publications

1. (SCI) Zhu, Guangyu and **Fan, Jiaxin** and Huang, Xinglin and Nuo, Zhang and Wu, Bo and Wei, Yun. "Knowledge Acquisition Method of Urban Rail Transit Safety Event Case Base for Intelligent Emergency Response." *IEEE Transactions on Automation Science and Engineering,* 2023. (In Review)

2. (EI) Zhu, Guangyu and Yang, Rongzheng and **Fan, Jiaxin** and Wei, Yun and Wu, Wu and Wu, Qi. "Information Fusion and Emergency Knowledge Graph Construction of Urban Rail Transit." *International Journal of Computational Science and Engineering,* 2023. (Paper accepted)

3. (SCI) Zhu, Guangyu and Sun, Ranran and **Fan, Jiaxin** and Li, Furong and Hou, Yuhong and Yu, Hui and Liu, Peter Xiaoping. "Coupling Effect and Chain Evolution of Urban Rail Transit Emergencies." *IEEE Transactions on Intelligent Transportation Systems,* 2023.pp.1-10. Available at: doi:10.1109/TITS.2023.3283100

Intellectual Property (IP)

Urban Rail Transit Emergency Plan Workflow Information Extraction Software　　　　　　Mar 2023

- Registration number: 2023SR0321224 and Volume number: 2023-0066.

Research Grant Projects

Knowledge Graph Construction, Reasoning, and Decision Making for Intelligent Emergency Response of Urban Rail Transit　　　　　　Apr 2022 - Present

- National Natural Science Foundation of China (General Program): NSFC-62272036.

Research on Big Data Fusion Technology for Real-Time Safety Assessment of High-Speed Railway Track System　　　　　　Dec 2021 - Present

- National Natural Science Foundation of China (Key Program): NSFC-62132003.

Relevant Skills

Programming Languages: Python (Pytorch), C, MATLAB
Other Tools: Neo4j, AutoCAD, TransCAD, ArcGIS, SPSS, PTV-VISSIM, Cisco Packet Tracer, Adobe Photoshop, Adobe Premiere Pro, Adobe After Effect, VOSviewer, Protégé

Awards/Scholarships

2022-2023: Outstanding League Cadre of the School of Traffic and Transportation of Beijing Jiaotong University
2022: First Prize of the Science and Technology Progress Award from the Beijing Rail Transit Association
2021 & 2022: First-class Scholarship for Postgraduate Studies (Scholarship ratio: around 30%)
2021: Outstanding Graduate of Nanjing Agricultural University
2017-2018 & 2019-2020: National Inspirational Scholarship (Scholarship ratio: around 3%)
2017-2018 & 2018-2019 & 2019-2020: Merit Student Scholarship
2017-2018 & 2018-2019: Single Subject Merit Scholarship
2019: Outstanding Leader Merit Student of the Career Development Association
2019: Third Prize of "Internet +" Innovation and Entrepreneurship Competition of Nanjing Agricultural University
2019: Outstanding League Member of Engineering College of Nanjing Agricultural University
2018: Outstanding League Cadre of Engineering College of Nanjing Agricultural University
2018: Third Prize of National English Contest for College Students

Certifications

2019: Advanced AutoCAD-Vocational and Technical Training Certificate
2019: NCRE-4 (National Computer Rank Examination)
2018 & 2019: CET4(628), CET6 (549)