

Jixin Fan

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Education

Beijing Jiaotong University, China

Sep 2021 – Jun 2024

- MSc in Transportation Planning and Management
- **Average score:** 88.3/100 (Top 9%)
- **Thesis:** Research on Q&A Method Based on Knowledge Graph for Urban Rail Transit Emergency Knowledge
- **Supervisor:** Dr. Guangyu Zhu

Nanjing Agricultural University, China

Sep 2017 – Jun 2021

- BSc in Transportation Engineering
- **Average score:** 88.7/100 (Top 5%)
- **Thesis:** Design And Optimization Of A Disc Brake
- **Supervisor:** Associate Professor Guozhu Zhao

Skills

Programming & Data Analysis: Python, C, MATLAB, Neo4j

Transportation Systems Engineering: TransCAD, PTV-VISSIM, Software Testing (CANoe, ETAS INCA/MDA)

Other Tools: AutoCAD, Adobe Creative Suite (Photoshop, Premiere, After Effects), Cisco Packet Tracer

Research Experience

Research Assistant, Beijing Jiaotong University Beijing

Mar 2022 – Jun 2024

- Designed a knowledge framework for Urban Rail Transit (URT) contingency plans and historical emergency case records.
- Developed a semantic-enhanced entity extraction model to acquire knowledge from emergency case records.
- Utilized Py2neo to store and visualize knowledge in a Neo4j graph database, and constructed an URT Emergency Knowledge Graph using contingency plans and emergency case records.
- Generated a domain-specific Q&A dataset and built models for entity recognition, entity normalization, and intent recognition to enable intelligent querying.
- Designed and implemented a URT emergency knowledge Q&A platform, retrieving answers by executing Cypher queries on the Knowledge Graph.

Research Assistant, Nanjing Agricultural University

Mar 2019 – Jun 2020

- 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

Software Testing Engineer, BYD Auto New Technology Research Institute, Shenzhen, China

Jul 2024 – Present

- Spearhead testing for Vehicle Control Unit (VCU) flashing, Unified Diagnostic Services (UDS) routine services, and diagnostic protocol layers.
- Execute comprehensive functional tests on actual vehicles to ensure full-feature deployment readiness.
- Develop the automated testing tools for UDS diagnostics and VCU flashing.
- Design and develop automated test cases to systematically exceed target test coverage metrics.

Intern, China Academy of Education Sciences, Beijing, China

Oct 2023 – Dec 2023

- Authored and maintained flowchart guidelines to standardize process documentation across the "Digital Academy" initiative.
- Reviewed and refined business process flowcharts, ensuring clarity and accuracy to support orderly project advancement.

Publications

1. Chen, Y., Wu, X., **Fan, J.**, & Zhu, G. (2025). A Data-Enhanced Deep Learning Approach for Emergency Domain Question Intention Recognition in Urban Rail Transit. *Computers, Materials & Continua*, 84(1).
2. Zhu, G., **Fan, J.**, Huang, X., Zhang, N., Wu, B., & Wei, Y. (2023). Knowledge acquisition method of urban rail transit safety event case base for intelligent emergency response. *IEEE Transactions on Automation Science and Engineering*.
3. Zhu, G., Sun, R., **Fan, J.**, Li, F., Hou, Y., Yu, H., & Liu, P. X. (2023). Coupling Effect and Chain Evolution of Urban Rail Transit Emergencies. *IEEE Transactions on Intelligent Transportation Systems*, 25(1), 1044-1053.

Patents

Urban Rail Transit Emergency Plan Workflow Information Extraction Software

Mar 2023

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

Student Leadership Experience

Class Committee Member, Class 2101, Beijing Jiaotong University

Sep 2021 – Jun 2024

- **Work content:** Class administration; Document verification and distribution; Materials organization.

Director of the News and Media Center, Career Development Association, Nanjing Agricultural University

Sep 2018 – Jun 2019

- **Work content:** Operation of WeChat official account; Photoshoot of activities; Management of the department.

Awards/Scholarships

2024: Outstanding Graduate Award - Beijing Jiaotong University (Top institutional honor)

2023: First Prize, Science & Technology Progress Award - Beijing Rail Transit Association (Technical innovation recognition)

2021, 2022, and 2023: First-class Postgraduate Scholarship - Beijing Jiaotong University (Awarded to top 30% of graduates)

2021: Outstanding Graduate Award - Nanjing Agricultural University (Undergraduate excellence recognition)

2018 and 2020: National Inspirational Scholarship - Ministry of Education (Top 3% nationally, highly competitive)

2018, 2019, and 2020: Merit Student Scholarship - Nanjing Agricultural University (Three-time consecutive recipient)

2018 and 2019: Single Subject Excellence Award - Nanjing Agricultural University (Academic specialization recognition)

2019: Outstanding Student Leader Award - Career Development Association, Nanjing Agricultural University

2019: Third Prize, "Internet+" Innovation Competition - Nanjing Agricultural University (Entrepreneurship and innovation award)

2018: Third Prize, National English Contest - National College English Competition