

Qihang Sun | Curriculum Vitae

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RESEARCH INTEREST

Economics of Transportation, Traffic Modeling, Optimization, Pedestrian Dynamics

EDUCATION

Beihang University <i>Ph.D. Student in Management Science and Engineering</i>	Beijing, CHN 2023.09 - Present
Beihang University <i>B.S. in Biomedical Engineering (Minor)</i>	Beijing, CHN 2020.09 - 2023.06
Beihang University <i>B.S. in Information Management and Information System</i>	Beijing, CHN 2019.09 - 2023.06

AWARDS & HONORS

- Best Paper Award, The 5th Frontier Symposium on Traffic Behavior and Transportation Science, 2024
- Freshmen Scholarship, Beihang University, 2023
- Outstanding Graduate Student, Beihang University, 2023
- Merit Student, Beihang University, 2022
- Model Student of Academic Records, Beihang University, 2022
- The Grand Price Academic Scholarship, Beihang University, 2022
- The First Prize Discipline Competition Scholarship, Beihang University, 2022
- The Second Prize Social Work Scholarship, Beihang University, 2022
- Honorable Mention Prize in Mathematical Contest In Modeling (MCM), COMAP, 2022
- The Second Prize in China Undergraduate Mathematical Contest in Modeling, CUMCM, 2021
- The Second Price Academic Scholarship, Beihang University, 2021
- Outstanding Volunteer, Beihang University, 2021

RESEARCH EXPERIENCE

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| Flexible traffic demand management strategy considering violations | 2023.11 – Present |
| <ul style="list-style-type: none">Designed a flexible traffic demand management strategy to reduce traffic congestion of morning commuting system.Introduced a scheme in consideration of violations to reduce the deadweight losses to the system.Derived the total travel cost under the equilibrium condition to prove the effectiveness of the strategy. | |
| Alleviation of vertical congestion based on elevator retrofit | 2023.09 – 2023.11 |
| <ul style="list-style-type: none">Developed a novel retrofit scheme of elevators which converted the passenger elevator into cargo elevator to alleviate vertical congestion in peak time.Demonstrated the theoretical and practical feasibility of the retrofit scheme. | |
| Pedestrian flow modeling and analysis considering velocity heterogeneity | 2022.10 – 2023.08 |
| <ul style="list-style-type: none">Constructed continuous social force model of pedestrian dynamics, to reveal the movement characteristics of pedestrians more accurately.Verified the validity of model construction and parameter setting by real pedestrian movement data.Investigated the dynamic evolution of the self-organized phenomenon. | |

Development of a novel medical data management system

2021.03 - 2021.06

- Established a medical database management system which can realize ECG data collection, storage, query, EDF standardized input and output and ECG real-time rendering .
- Laid a foundation for the subsequent implementation of data analysis, data mining, deep learning and other functions

INTERNSHIP EXPERIENCE

Ministry of Industry and Information Technology

2022.03-2022.09

Undergraduate Research Assistant

- Participated in the construction of national digital infrastructure, collected and obtained macroeconomic indicators, monitored the operation of the electronics industry, and redacted a complete digital economy industry analysis series report.
- Developed two information systems to ensure the efficient and orderly daily business of the department.

SKILLS

Programming	Python, R, Matlab, C, SQL, \LaTeX
Languages	Chinese (<i>Native</i>), English (<i>Conversational</i>)
Software	MS Office, IBM SPSS
Sports	Football, Badminton, Table tennis

PUBLICATIONS

- New insights into bi-directional pedestrian flows with heterogeneous speeds: modeling and analyses**
Accepted by The 14th Workshop on Computational Transportation Science
Qi-Hang Sun, Ren-Yong Guo
- Morning Peak Reservation Scheme Incorporating Noncompliance Behaviors: Modeling and Analysis**
Accepted by The 5th Frontier Symposium on Traffic Behavior and Transportation Science (TBTS 2024)
Qi-Hang Sun, Ren-Yong Guo

CONFERENCE TALKS

- The 14th Workshop on Computational Transportation Science**, Shanghai, 2023.08
Oral Presentation
- The 5th Frontier Symposium on Traffic Behavior and Transportation Science**, Yichang, 2024.08
Oral Presentation

SELECTED COURSES

- Ph.D. Student:**
Advanced Microeconomics Theory (94), Advanced Mathematical Programming (93), Optimization Method (98), Advanced Optimization Theory and Algorithm (92), Urban Economics (95), Advanced Academic English Writing (95)
- Undergraduate:**
Information Systems Analysis and Design (95), Program Designing (92), Production and Operations Management (94), Logistics and Supply Chain Management (96), Artificial Intelligence and Deep Learning (97), Decision-Making and Business Intelligence Systems (96), Large-Scale Database Application Experiment (96)

REFERENCES

- **Dr. Renyong Guo**
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Beihang University, Beijing, CHN
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