Qihang Sun | Curriculum Vitae

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RESEARCH INTEREST

Economics of Transportation, Traffic Modeling, Optimization, Pedestrian Dynamics

EDUCATION

Beihang University **Beijing, CHN**
Ph.D. Student in Management Science and Engineering; GPA: 3.9/4.0; Rank: 2/51 *2023.09 - Present*

Beihang University **Beijing, CHN**
B.S. in Biomedical Engineering (Minor) *2020.09 - 2023.06*

Beihang University **Beijing, CHN**
B.S. in Information Management and Information System *2019.09 - 2023.06*

AWARDS & HONORS

- **The First Prize Academic Scholarship**, Beihang University, 2024
- **Merit Student**, Beihang University, 2024
- **Excellent League Member**, Beihang University, 2024
- **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

Reservation scheme for congestion management during morning commute *2023.11 – 2024.11*

- Designed a reservation scheme for congestion management during the morning commute
- Conceptualized and characterized noncompliance of commuters
- Examined the efficiency of the reservation scheme considering noncompliance.

Alleviation of vertical congestion based on elevator retrofit *2023.09 – 2023.11*

- 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*

- 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.

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 department's efficient and orderly daily business.

SKILLS

Programming	Python, R, Matlab, C, SQL, LaTeX
Languages	Chinese (*Native*), English (*Conversational*)
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

- **Reservation scheme for congestion management during morning commute: Considering noncompliance**
  Submitted to Transportation Research Part B: Methodological
  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), Artificial Intelligence and Deep Learning (97), Decision-Making and Business Intelligence Systems (96), Large-Scale Database Application Experiment (96)

REFERENCES

- **Dr. Renyong Guo**
  Professor, School of Economics and Management
  Beihang University, Beijing, CHN
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