

Qinglong LU, Ph.D. Candidate

Chair of Transportation Systems Engineering, Department of Mobility Systems Engineering, Technical University of Munich, Germany

Address: Arcisstraße 21, 80333 München, Germany

☎ +49 89 28910460

✉ qinglong.lu@tum.de

Nationality: Chinese

Date of Birth: 06.08.1995



EDUCATION

- **Technical University of Munich, Munich, Germany** *Jun 2021 – Present*
Ph.D. candidate, Transportation Systems Engineering
Thesis: Evaluation and simulation-based optimization of urban traffic resilience
- **Technical University of Munich, Munich, Germany** *Oct 2018 – Oct 2020*
Master's degree, Transportation Systems
Thesis: Developing dynamic pricing methods for ride-sharing services
- **Sun Yat-sen University, Guangzhou, P.R. China** *Sep 2014 – Jun 2018*
Bachelor's degree, Traffic Engineering
Thesis: Taxi passenger demand prediction based on taxi trajectory data

RESEARCH EXPERIENCE

- **Chair of Transportation Systems Engineering, Technical University of Munich** *Jun 2021 – Present*
Research associate Munich, Germany
- **Intelligent Transportation System Laboratory, Kyoto University** *May 2023 – Jul 2023*
Visiting researcher Kyoto, Japan
– Evaluating traffic resilience based on macroscopic fundamental diagrams.
- **Chair of Transportation Systems Engineering, Technical University of Munich** *Nov 2020 – Apr 2021*
Research assistant Munich, Germany
– Integrating PCA into the simultaneous perturbation stochastic approximation algorithm.
- **Faculty of Electrical Engineering, University of Ljubljana** *Mar 2020 – Apr 2020*
Research assistant Ljubljana, Slovenia
– Developing autonomous and connected transport deployment scenarios linking individual driving with network efficiency.
- **Chair of Transportation Systems Engineering, Technical University of Munich** *Apr 2019 – Mar 2020*
Research assistant Munich, Germany
– Dynamic vanpooling: passenger preferences, operations modeling, and simulation-based quantification of impacts.

PUBLICATIONS

Peer-reviewed Journal Articles

- 1 **Q.-L. Lu**, V. Mahajan, C. Lyu, and C. Antoniou, “Analyzing the impact of fare-free public transport policies on crowding patterns at stations using crowdsensing data,” *Transportation Research Part A: Policy and Practice*, vol. 179, p. 103944, 2024.
- 2 **Q.-L. Lu**, M. Qurashi, and C. Antoniou, “A two-stage stochastic programming approach for dynamic od estimation using lbsn data,” *Transportation Research Part C: Emerging Technologies*, vol. 158, p. 104460, 2024.
- 3 **Q.-L. Lu**, W. Sun, J. Dai, J.-D. Schmöcker, and C. Antoniou, “Traffic resilience quantification based on macroscopic fundamental diagrams and analysis using topological attributes,” *Reliability Engineering & System Safety*, p. 110095, 2024.
- 4 C. Lyu, **Q.-L. Lu**, X. Wu, and C. Antoniou, “Tucker factorization-based tensor completion for robust traffic data imputation,” *Transportation Research Part C: Emerging Technologies*, vol. 160, p. 104502, 2024.

- 5 Z.-J. Liu, **Q.-L. Lu***, and J. Gao, “A similarity-based data-driven car-following model considering driver heterogeneity,” *Transportation research procedia*, 2023, (in press).
- 6 **Q.-L. Lu**, M. Qurashi, and C. Antoniou, “Simulation-based policy analysis: The case of urban speed limits,” *Transportation Research Part A: Policy and Practice*, vol. 175, p. 103 754, 2023.
- 7 **Q.-L. Lu**, M. Qurashi, and C. Antoniou, “A ridesplitting market equilibrium model with utility-based compensation pricing,” *Transportation*, pp. 1–36, 2022.
- 8 M. Qurashi, **Q.-L. Lu**, G. Cantelmo, and C. Antoniou, “Dynamic demand estimation on large scale networks using principal component analysis: The case of non-existent or irrelevant historical estimates,” *Transportation Research Part C: Emerging Technologies*, vol. 136, p. 103 504, 2022.
- 9 **Q.-L. Lu**, M. Qurashi, D. Varesanovic, J. Sodnik, and C. Antoniou, “Exploring the influence of automated driving styles on network efficiency,” *Transportation research procedia*, vol. 52, pp. 380–387, 2021.
- 10 **Q.-L. Lu**, “A structural equations approach for modeling the endogeneity of lane-mean speeds considering the downstream speeds,” *European journal of transport and infrastructure research*, vol. 20, no. 4, pp. 252–265, 2020.

Peer-reviewed Conference Contributions

- 1 N. Yang, **Q.-L. Lu***, C. Lyu, and C. Antoniou, “Transfer learning for transportation system resilience patterns prediction using floating car data,” in *103rd Annual Meeting of the Transportation Research Board (TRB 2024)*, 2024.
- 2 J. Dai, W. Sun, **Q.-L. Lu**, J.-D. Schmöcker, and C. Antoniou, “On the resilience of railway station demand in response to unexpected events: A case study of japan in covid-19,” in *25th Euro Working Group on Transportation Conference (EWGT 2023)*, 2023.
- 3 **Q.-L. Lu**, M. Qurashi, and C. Antoniou, “A two-stage stochastic programming approach for dynamic od estimation,” in *102nd Annual Meeting of the Transportation Research Board (TRB 2023)*, 2023.
- 4 **Q.-L. Lu**, W. Sun, J. Dai, J.-D. Schmöcker, and C. Antoniou, “Surrogate modeling for recovery measures optimization to improve MFD-based traffic resilience,” in *The 9th International Symposium on Transport Network Resilience (INSTR)*, 2023.
- 5 **Q.-L. Lu**, W. Sun, D. Jiannan, J.-D. Schmöcker, and C. Antoniou, “An MFD-based optimization approach to improve transportation system resilience under infrastructure disruptions,” in *25th Euro Working Group on Transportation Conference (EWGT 2023)*, 2023.
- 6 M. Neun, C. Eichenberger, H. Martin, *et al.*, “Traffic4cast at neurips 2022–predict dynamics along graph edges from sparse node data: Whole city traffic and eta from stationary vehicle detectors,” in *NeurIPS 2022 Competition Track*, PMLR, 2022, pp. 251–278.
- 7 **Q.-L. Lu**, K. Yang, and C. Antoniou, “Crash risk analysis for the mixed traffic flow with human-driven and connected and autonomous vehicles,” in *2021 IEEE International Intelligent Transportation Systems Conference (ITSC)*, IEEE, 2021, pp. 1233–1238.
- 8 M. Qurashi, **Q.-L. Lu**, G. Cantelmo, and C. Antoniou, “PC-SPSA: Exploration and assessment of different historical data-set generation methods for enhanced DTA model calibration,” in *9th Symposium of the European Association for Research in Transportation (hEART2020)*, 2021.

Working papers (under review)

- 1 T. Guo, H. Wu, **Q.-L. Lu**, and C. Antoniou, *Two-stage stochastic optimization approach for uam station siting*, *Transportation Research Part A: Policy and Practice*, (submitted).
- 2 **Q.-L. Lu**, W. Sun, C. Lyu, J.-D. Schmöcker, and C. Antoniou, *A surrogate model approach for recovery measure optimization to improve urban traffic resilience to supply disruptions*, *Transportation Science*, (submitted).

REVIEW ACTIVITIES

Journals

- Transportation Research Part A: Policy and Practice
- Transportation Letters: The International Journal of Transportation Research
- Research in Transportation Business and Management

International conferences

- Transportation Research Board
- IEEE Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS)
- MobilTUM

GRANTS, HONORS & AWARDS

- Best Paper of the PhD Session, Euro Working Group on Transportation *Oct, 2023*
- DAAD-Kyoto University Partnership Programme, DAAD *May, 2023*
- Traffic4Cast Competition 2022: Second Place, IARAI *Nov, 2022*
- ITS Bavaria Award 2021: Best Master's Thesis Award, ITS Bavaria *May, 2022*
- Graduation Scholarship (DAAD STIBET), TUM *Aug, 2020*
- Short Term Scientific Mission (STSM) Grant, WISE-ACT and DAAD *Apr, 2020*

PROJECTS

- Deep learning anticipated urban mobility peaks (DARUMA) *Apr 2021 - Apr 2024*
An European Interest Group CONCERT-Japan DARUMA project
- A MFD dynamics based resilience optimization model for road transportation under network disruptions
Apr 2023 - Jul 2023
DAAD-Kyoto University Partnership Programme towards SDGs 2023
- Developing ACT deployment scenarios linking individual driving with network efficiency
Apr 2020 - May 2020
Under the COST Action CA16222: Wider impacts and scenario evaluation of autonomous and connected transport

TEACHING

- **2021/2022/2023 Winter semester** *Oct - Feb*
 - Special Topics on Model Calibration
- **2022 Summer semester** *Apr - Aug*
 - Statistical Learning and Data Analytics for Transportation Systems
 - Optimization for Transportation Systems
- **Theses supervision**
 - Transfer learning for transportation system resilience estimation using floating car data (*Nov 2022 - May 2023*. Student: Ningkan Yang. **Master's Thesis**) (ITS Bavaria Award 2023: Best Master's Thesis)
 - Calibration of car-following models with genetic algorithm and particle swarm optimization methods (*May 2022 - Oct 2022*. Student: Yuting He. **Bachelor's Thesis**)