

XIANG GUO

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🎓 EDUCATION

University of Virginia (UVa) , Charlottesville, VA, USA	2017 – Present
<i>Ph.D student</i> in Systems and Information Engineering (SIE)	
Beihang University (BUAA) , Beijing, China	2014 – 2017
<i>M.S.</i> in Transportation Engineering	
Beihang University (BUAA) , Beijing, China	2010 – 2014
<i>B.S.</i> in Transportation Engineering	

🔍 RESEARCH INTERESTS

- Human factors, Human-machine interaction, In-vehicle User Interaction Design
- Traffic Safety, Driver Behavior Analysis, Driving Simulation
- Data Analysis, Machine Learning

📖 PUBLICATIONS

1. Xiang Guo, Lian Cui, Brian Park, Wen Ding, Marisa Lockhart, Inki Kim, Driving through Automated Vehicle Platoons with Different Time Headway: A Preliminary Study on Human Drivers' Gaze Behavior at Dynamic Area of Interest, *The 16th Annual Conference on Systems Engineering Research*, 2018 (in Publication)
2. Xiang Guo, Ying Wang, Jianqiao Zhang and Fan Zhou, Application and development of Detection Response Task (DRT) in driver cognitive workload research, *Chinese Journal of Ergonomics*, 23(1), pages 73-77, 2017 (in Chinese)
3. Ying Wang, Xiang Guo, Yueyan Zhu, and Jianqiao Zhang. Color block task: A new surrogate secondary task to measure the impact of drivers' incrementally increased workload. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, volume 60, pages 1889–1893. SAGE Publications Sage CA: Los Angeles, CA, 2016
4. Yueyan Zhu, Ying Wang, Guofa Li, and Xiang Guo. Recognizing and releasing drivers' negative emotions by using music: Evidence from driver anger. In *Adjunct Proceedings of the 8th International Conference on Automotive User Interfaces and Interactive Vehicular Applications*, pages 173–178. ACM, 2016
5. Ying Wang, Jiaqi Zhu, TingTing Zheng, Fei Gao, and Xiang Guo. Comparing Three Smart Device Setups for the Use of Speech Interface in Destination Search while Driving. *Transportation Research Board 94th Annual Meeting* (No. 15-0469), 2015.
6. Ying Wang, RuiXue Liu, Zhuwei Qiang, Jiaqi Zhu, Xiang Guo, Using Behavior and Human Machine Interaction Safety of In-vehicle Smart Terminals, *Industrial Engineering and management* 3, page 141-146, 2014. (in Chinese)

⚓ RESEARCH EXPERIENCE

University of Virginia VA, USA	Aug.2017 – Present
<i>Research Assistant</i> Advisor: Prof. Inki Kim	
Research on human factors, human-machine interaction, traffic safety	
<ul style="list-style-type: none">• Driving simulation research on human driving behavior(vehicle dynamics, eye tracking and physiological analysis) when cutting through automated vehicle platoons in mixed traffic environments• Deep learning application in eye tracking videos to automatically detect areas of interest (AOIs)	

- Using convolutional neural networks to extract users' characteristics from the videos, in order to track the learning process and then automatically evaluate the training effect of a Vessel Ligation Benchtop Simulator for medical students.

Beihang University Beijing, China

Apr.2016 – March.2017

Master Thesis Advisor: Prof. Ying Wang and Prof. Guangquan Lu

Safety Evaluation Model for the Transition from Automated to Manual Driving Considering the Human-vehicle-road Loop

- Research on take-over period in highly automated driving considering the human-vehicle-road loop
- Driver performance analysis (driving, eye-tracking, physiological)
- Safety Evaluation Model for evaluating the quality and safety of the control authority transition process of autonomous vehicles

Beijing Key Laboratory for Cooperative Vehicle Infrastructure Systems and Safety Control

Beijing, China

Jan.2015 – March.2017

Research Assistant Advisor: Prof. Ying Wang

Project "*Driver Inattention Detection of driver inattention state based on gaze concentration*", sponsored by the National Natural Science Foundation of China

- Design a new surrogate secondary task to measure the impact of drivers' incrementally increased workload
- Driving simulation scenario design and in-vehicle human-machine interaction evaluation
- Make visual and cognitive Detection Response Task (DRT) prototype system for secondary task test in driving experiment

Beihang University Beijing, China

Sep.2013 – Jun.2014

Undergraduate thesis Advisor: Prof. Ying Wang

"Comparison and Analysis of Driver Behavior under Special Road Environments: Cross-sea Bridge vs. Undersea Tunnel"

- Traffic Environment Simulation for Hong Kong-Zhuhai-Macao Bridge with complex road environment (oversea bridge, undersea tunnel and roundabout)
- Safety evaluation experiment for Research Institute of Highway Ministry of Transport, China

Beihang University Beijing, China

May.2013 – May.2014

Principal Investigator, Sponsored by Beihang University Student Research Training Plan (SRTP)

- Design and development of a driver Driving under the influence (DUI) state self-detection mobile application in Android mobile system
- 'Android BAC Calc' released online (<http://apk.hiapk.com/appinfo/com.example.myfirstapp/1>)

➤ PRESENTATION

- Paper entitled "Driving through Automated Vehicle Platoons with Different Time Headway: A Preliminary Study on Human Drivers' Gaze Behavior at Dynamic Area of Interest" at the 16th Annual Conference on Systems Engineering Research, Virginia, USA, May.8, 2018
- "The Effect of Three Visual and Cognitive Secondary Tasks on Improving Drivers' Take-over Performance in Automated Driving" at the 2016 National Postgraduate Student Forum on Industrial Engineering, Beijing, China, Dec.10, 2016
- "Drivers' Take-over Performance in Automated Driving under Different Visual and Cognitive Workload" at the International Traffic Medicine Association (ITMA) 25th World Congress, Beijing, China, Sep.24, 2016
- "The application and development of wearable device in driver assistance", at the 2014 National Postgraduate Student Forum on Industrial Engineering, Beijing, China, Nov.22, 2014

WORKING EXPERIENCE

SAIC Motor Shanghai, China Apr.2017 – Jul.2017

Engineer Manager: Cheng Zhang

- Data processing for autonomous vehicle test in Advanced Technology Department
- Competition analysis for advanced driving assistance system

Tusimple Technology Co., Ltd Beijing, China Feb.2016 – Jul.2016

Product Intern Manager: Xiangxi Li

- Market research, test standard for product preparation
- Assist in the data gathering and processing

Research Institute of Highway Ministry of Transport Beijing, China Dec.2013 – May.2014

Safety Evaluation Intern Engineer Manager: Shengde Di

- Traffic Scenario Simulation by UC/win-road software for the Ministry of Transportation China
- Traffic sign design improvement

TEACHING EXPERIENCE

Beihang University Beijing, China Feb.2015 – Jun.2015

Teaching Assistant Department of Transportation Science and Engineering

”Transportation Planning” course for junior students

Beihang University Beijing, China Feb.2016 – Jun.2016

Instructor School of Continuing Education

Responsible for lecturing, correcting assignments and examination test of course ”Engineering Drawing” for students majoring in Civil Engineering

SKILLS

- Programming Languages: Python == R > Matlab > C == Java, Latex
- Statistics: SPSS, Minitab
- Traffic Simulation: UC/win-road, TransCAD, Paramics, VisSim, CarSim, TransCAD
- Mechanical Engineering: Solidworks, AutoCAD, Ansys, ADAMS
- Experiment: SmartEye/SMI/Tobii Eye tracking system, Biopac/Biograph physiological system

HONORS AND AWARDS

Graduate Research Assistant scholarship from University of Virginia 2017 – Present

Graduation with honor: College Graduate Excellence Award of Beijing(top 3 in the department) 2017

2nd Prize, graduate student Scholarship from Beihang University 2013 – 2017

National Inspirational Scholarship for College Students from Beihang University 2013 – 2014

COMMUNITY SERVICE

Registered member of Beijing volunteer, NO: 110114100417295 2011 – Present

Informal Asia-Pacific Economic Cooperation (APEC) Economic Leaders’ Meetings Nov.2014

The 12th China International Chorus Festival (CICF) Jul.2014

The 9th China International Garden EXPO Jun.2013

The 60th Anniversary of Beihang University Oct.2012

The 11th China International Chorus Festival (CICF) Jul.2012