

# Xiaoyue Zhu

School of Transportation, Southeast University, Nanjing, Jiangsu, China 211189

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## EDUCATION

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### Southeast University

Aug. 2020 – Present

*M.S. in Transportation Planning and Management; GPA: 88.7/100*

*Nanjing, China*

- **Thesis:** A Cooperative Traffic Control Strategy in Highway Work Zones
- **Advisors:** Pan Liu and Zhibin Li

### University of Waterloo

Fall 2019

*Program: Engineering, Non Degree, Exchange; GPA: 95.33/100*

*Waterloo, Canada*

- **Sponsor:** China Scholarship Council (CSC)

### University of California, Berkeley

Summer 2018

*Program: Summer Session; GPA: 3.65/4*

*Berkeley, CA*

### Southeast University

Aug. 2016 – June. 2020

*B.Eng. in Traffic Engineering (Mao Yisheng Elite Class); GPA: 3.9/4*

*Nanjing, China*

- **Thesis:** Real-time highway traffic states estimation and traffic event discrimination
- **Advisor:** Pan Liu

## RESEARCH AND PROJECT EXPERIENCES

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### Southeast University

Aug. 2020 – Present

#### *Research Assistant*

*Nanjing, China*

My primary research focuses lie in traffic flow theory and highway traffic control, with applications in practical intelligent highway control and management. My past works include:

- **Research – Vehicle Merging Characteristics in Highway Work Zones:** recording aerial videos in 10 highway work zones with different traffic flow rates and layouts; extracting vehicle trajectory data using the OpenVTER framework and proposing a trajectory dataset; comparing merging behaviors in terms of merging location, gap, merging speed and lane changing impact.
- **Research – Modeling Lane Changing Behavior in a Expressway Weaving Section:** recording aerial videos in a short weaving section in Nanjing; detecting vehicles based on YOLOv4; modeling the consecutive lane changing behavior in the weaving section.
- **Project – Design and Research of Active Highway Traffic Control System:** (deployed on the Rongwu and Jingde highways in Hebei province) developing integrated mainline traffic management strategies and algorithms for typical highway scenarios; designing a dynamic traffic control system architecture; writing white papers, technical specifications and project reports.
- **Project – Traffic Operation in Runyang Bridge Connection Area:** analyzing traffic flow operation characteristics and identifying congestion nodes; investigating congestion formation and diffusion mechanism of bottleneck sections using simulation; optimizing traffic flow on bottleneck sections.

Currently, I am working on the topics in my graduation thesis. T1: the characteristics of lane changing behaviors at highway work zones; T2: the impacts of lane lines on the capacity of highway work zones and the optimization of the length of lane lines; T3: a cooperative dynamic control strategy (lane change control plus variable speed limits) near highway work zones.

### Southeast University

Nov. 2017 – Apr. 2018

#### *Research Assistant*

*Nanjing, China*

- **Student Research Training Program – Analysis of Traffic Congestion and Conflict Characteristics of Typical Bottleneck Sections of Expressways:** extracting macroscopic traffic flow parameters and microscopic vehicle status to determine congestion status using trajectory data; analyzing the safety risks of vehicle lane changes on expressways.

## PUBLICATIONS AND PRESENTATIONS

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### Conference Papers

1. “*Empirical Studies on Merging Characteristics in Temporary Highway Work Zones with Different Traffic States and Layouts*”, with Zheng Li, Xinkai Ji, Zhibin Li and Pan Liu. Submitted for presentation in 102nd Annual Meeting of the Transportation Research Board.

### Presentations

1. “*Survival Analysis of the Likelihood and Duration of Traffic Flow Breakdown at Freeway Merge Bottlenecks*”. Poster presentation at ASCE International Conference on Transportation and Development, June 2022.

## TEACHING EXPERIENCES

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### Southeast University

Spring 2022

**Teaching Assistant** for Traffic Safety

Nanjing, China

- **Instructors:** Pan Liu and Yanyong Guo

Modified assignments, graded all assignments and final exam, drafted solutions and held office hours.

### Southeast University

Spring 2021

**Teaching Assistant** for Traffic Safety

Nanjing, China

- **Instructor:** Pan Liu

Graded course assignments and final exam, drafted assignment solutions and held office hours.

## WORK AND SERVICE EXPERIENCES

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### Nanjing Institute of City & Transport Planning Co., Ltd.

Summer 2019

**Intern**

Nanjing, China

- Participated in a parking planning project in Nanjing Jiangbei New Area and other urban transportation planning projects.

### The 2<sup>nd</sup> Jiangsu Development Summit

May. 2019

**Volunteer**

Nanjing, China

- Responsible for one-on-one guest reception.

### Southeast University

Aug. 2017 – Jun. 2018

**Freshman Class Advisor**

Nanjing, China

- Organize class meetings and hold course review sessions.
- 7 out of 30 students were selected in Mao Yisheng Elite Class after freshman year.

### Southeast University

Sep. 2017 – Jun. 2019

**Member of National Education Center for Liberal Arts and Society**

Nanjing, China

- Invite and keep in touch with cultural celebrities to give lectures at Southeast University.
- Play a leadership role in organizing Sparkly Key Animation Studio Campus Talk.

## HONORS AND AWARDS

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Second Class Scholarship for Graduate Students of Southeastern University

2020, 2021

National Third Prize in the National English Competition for College Students

2020

China Scholarship Council (CSC) Scholarships

2019

Third Prize of Humanities and Social Science Knowledge Contest

for Science and Technology Students in Jiangsu Province

2018

Merit Student in Southeast University

2017

Third Prize of Southeast University Advanced Mathematics Competition

2017

Southeast University Education Foundation Scholarship

2017

Outstanding Individual, School of Transportation, Southeast University

2017

## SKILLS AND ACTIVITIES

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**Programming Skills** : Python, MATLAB

**Software** : Word, Excel, PowerPoint, SPSS, L<sup>A</sup>T<sub>E</sub>X

**Languages** : English (fluent), Mandarin (native)

**Interests** : Basketball, Tennis, Swimming

## REFERENCES

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Prof. Pan Liu : pan\_liu@hotmail.com

Prof. Zhibin Li : lizhibin@seu.edu.cn

Prof. Yanyong Guo : guoyanyong@seu.edu.cn