

# Yu (Fred) SONG

270 Middle Turnpike, Storrs-Mansfield, CT 06269-5202  
fred.song@uconn.edu

---

## CURRENT APPOINTMENT

Assistant Research Professor	8/2022 – Present
Department of Civil and Environmental Engineering	
Connecticut Transportation Institute	
University of Connecticut	

## EDUCATION

PhD in Civil and Environmental Engineering	2021
Minor in Computer Science	
University of Wisconsin-Madison	
MS in Civil and Environmental Engineering	2016
University of Utah	
MSc in Transport and Planning	2012
Cardiff University	
BEng in Traffic and Transportation	2010
Beijing Jiaotong University	

## PREVIOUS EXPERIENCE

Postdoctoral Research Associate	10/2021 – 8/2022
Connecticut Transportation Institute, UConn	
Graduate Research Assistant	6/2017 – 9/2021
Lab Instructor	9/2018 – 12/2020
Research Intern	2/2017 – 5/2017
Department of Civil and Environmental Engineering, UW-Madison	
Graduate Research Assistant	8/2014 – 12/2016
Department of Civil and Environmental Engineering, U of Utah	
Student Design Trainee III	5/2016 – 8/2016
San Francisco Municipal Transportation Agency	
Transport Specialist	12/2013 – 5/2014
AECOM (Beijing)	
Research Analyst	6/2012 – 6/2014
China Academy of Transportation Sciences	
Assistant Transport Planner	11/2011 – 5/2012
WSP (Beijing)	

## PUBLICATIONS

### Journal Papers

- Song, Y., M.V. Chitturi, W. Bremer, A.R. Bill, D.A. Noyce. "Review of United States Research and Guidelines on Left Turn Lane Offset: Unsignalized Intersections and Signalized Intersections with Permitted Left Turns". *Journal of Traffic and Transportation Engineering*, 2022.
- Song, Y., M.V. Chitturi, D.A. Noyce. "Automated Vehicle Crash Sequences: Patterns and Potential Uses in Safety Testing". *Accident Analysis and Prevention*, 153, 2021.
- Song, Y., M.V. Chitturi, C. McCahill, D.A. Noyce. "People's Attitudes Toward Automated Vehicle and Transit Integration: Case Study of Small Urban Areas". *Transportation Planning and Technology*, 44(5), 2021.
- Cvijovic, Z., M. Zlatkovic, A. Stevanovic, Y. Song. "Conditional Transit Signal Priority for Connected Transit Vehicles". *Transportation Research Record: Journal of the Transportation Research Board*, 2021.
- Cvijovic, Z., M. Zlatkovic, A. Stevanovic, Y. Song. Multi-Level Conditional Transit Signal Priority in Connected Vehicle Environments. *Put i saobraćaj (Journal of Road and Traffic Engineering)*, 67(2), 2021.
- Song, Y., D.A. Noyce. "Effects of Transit Signal Priority on Traffic Safety: Interrupted Time Series Analysis of Portland, Oregon, Implementations". *Accident Analysis and Prevention*, 123, 2019, pp. 291-302.
- Song, Y., D.A. Noyce. "Assessing Effects of Transit Signal Priority on Traffic Safety: Empirical Bayes Before-After Study Using King County, Washington, Data". *Transportation Research Record: Journal of the Transportation Research Board*. 2672(8), 2018.
- Zlatkovic, M., A. Stevanovic, S. Zlatkovic, Y. Song, N. Mitrovic, I. Dakic. Planning and Assessment of Multimodal Transportation Systems: Case Studies in Salt Lake City, UT. *Put i saobraćaj (Journal of Road and Traffic Engineering)*, 64(4), 2018.
- Song, Y., M. Zlatkovic, R.J. Porter. "Evaluation of GPS-Based Transit Signal Priority for Mixed-Traffic Bus Rapid Transit". *Transportation Research Record: Journal of the Transportation Research Board*, 2539(1), 2016.
- Jiang, T., Z. Wu, Y. Song, X. Liu, H. Liu, H. Zhang. "Sustainable Transport Data Collection and Application: China Urban Transport Database". *Mathematical Problems in Engineering*, 2013.

### Conference Papers

- Song, Y., H. Tse, E.M. Lind, M.V. Chitturi, D.A. Noyce. "Safety Evaluation of Transit Signal Priority with Bus Speed Volatility as a Surrogate Measure: Case Study in Minnesota". In *ASCE ICTD 2021, Virtual Event*, June 8-10, 2021.
- Cvijovic, Z., M. Zlatkovic, A. Stevanovic, Y. Song. "Conditional Transit Signal Priority for Connected Transit Vehicles". In the 100th TRB Annual Meeting, Washington, D.C., January 25–29, 2021.
- Song, Y., M.V. Chitturi, C. McCahill, D.A. Noyce. "People's Attitudes Towards Autonomous Vehicles and Transit in Small Urban Areas". In the 99th TRB Annual Meeting, Washington, D.C., January 12-16, 2020.
- Song, Y., M.V. Chitturi, W. Bremer, A.R. Bill, D.A. Noyce. "Left-Turn Lane Offset: Research Synthesis and Review of Existing Guidelines". In the 99th TRB Annual Meeting, Washington, D.C., January 12-16, 2020.
- Burdett, B., Y. Song, A.R. Bill, D.A. Noyce. "The Effects of Roundabout Geometry on Ramp Terminal Crashes". In the 98th TRB Annual Meeting, Washington, D.C., January 13-17, 2019.
- Song, Y., D.A. Noyce. "Assessing Effects of Transit Signal Priority on Traffic Safety: Empirical Bayes Before-After Study Using King County, Washington, Data". In the 97th TRB Annual Meeting, Washington, D.C., January 7-11, 2018.
- Farid, Y.Z., Y. Song, A.R. Bill, D.A. Noyce. "Cost-Benefit Analysis of the Highway Safety Improvement Program Projects in Wisconsin Using Empirical Bayes Method". In the 97th TRB Annual Meeting, Washington, D.C., January 7-11, 2018.
- Zlatkovic, M., Y. Song, A. Stevanovic. "Traffic Impact Analysis for Multimodal Corridors in Salt Lake City, UT". In the 95th TRB Annual Meeting, Washington, D.C., January 8-12, 2017.

- Song, Y., M. Zlatkovic, R.J. Porter. "A Corridor-Level Evaluation of GPS-Based Transit Signal Priority". In ASCE ICTD 2016, Houston, TX, June 26-29, 2016.
- Song, Y., M. Zlatkovic, R.J. Porter. "Evaluation of GPS-Based Transit Signal Priority for Mixed-Traffic Bus Rapid Transit". In the 95th TRB Annual Meeting, Washington, D.C., January 10-14, 2016.

### **Working Papers**

- Song, Y., M.V. Chitturi, D.A. Noyce. "Impact of Event Encoding and Dissimilarity Measures on Traffic Crash Characterization Based on Sequence of Events". (Under Review at Accident Analysis and Prevention)
- Song, Y., M.V. Chitturi, D.A. Noyce. "Intersection Two-Vehicle Crash Scenario Specification for Automated Vehicle Safety Evaluation Using Sequence Analysis and Bayesian Networks". (Under Review at Accident Analysis and Prevention)
- Song, Y., G. Shi, C. Atkinson-Palombo, N. Garrick. "Road Safety in New York City After Vision Zero for Different Land Use Contexts". (Submitted to TRB Annual Meeting)
- Shi, G., Y. Song, C. Atkinson-Palombo, N. Garrick. "Examining Racial Disparities in Traffic Fatalities in the Post-Vision Zero Era (2014-2017) New York City" (Submitted to TRB Annual Meeting)
- Shirani, N., Y. Song, K. Wang, E. Jackson. "Evaluation of Driver Reaction to Disengagement of Automated Driving Systems While Driving Under Various Distractions". (Submitted to TRB Annual Meeting)
- Zlatkovic, M., Z. Cvijovic, A. Stevanovic, Y. Song. "Signal Control Preemption for Connected Emergency Vehicles: A Simulation Study". (Submitted to TRB Annual Meeting)

### **Technical Reports**

- Noyce, D.A., Y. Song. "Safety Effects of Transit Signal Priority: Magnitude and Mechanism (No. CTEDD 19-07SG)". 2020.
- Bremer, W.F., M.V. Chitturi, Y. Song, B.R. Claros, A.R. Bill, D.A. Noyce. "Design Standards for Unobstructed Sight Lines at Left-turn Lanes (No. MN/RC 2019-32)". 2019.
- Farid, Y.Z., D.A. Noyce, M.V. Chitturi, Y. Song, W.F. Bremer, A.R. Bill. "Practices in One-Lane Traffic Control on a Two-Lane Rural Highway (NCHRP Project 20-05, Topic 48-11)". 2018.
- Liu, X.C., M. Zlatkovic, R.J. Porter, K. Fayyaz, Y. Song. "Improving Efficiency and Reliability of Bus Rapid Transit (No. MPC 18-349)". 2018.

### **Book Chapters**

- Sabouri, S., A. Hajrasouliha, Y. Song, W.H. Greene. "Chapter 13 – Logistic Regression", in Basic Quantitative Research Methods for Urban Planners. Routledge. 2020.
- Garfinkel-Castro, A., T. Bushman, S. Sabouri, S.C. Brewer, Y. Song, K. Park. "Chapter 6 – Cluster Analysis", in Advanced Quantitative Research Methods for Urban Planners. Routledge. 2020.

## **PRESENTATIONS**

- "Ensuring a Safe and Efficient Future of Transportation". UConn Civil and Environmental Engineering Seminar, January 31, 2022. Invited Talk.
- "Traffic Crash Patterns and Causations Based on Sequence of Events: Preparing for a Transition into Automated Transportation". The 101st TRB Annual Meeting, Washington, D.C., January 9-13, 2022. Podium and Poster.
- "Automated Vehicle Crash Sequences: Patterns and Potential Uses in Safety Testing". The 101st TRB Annual Meeting, Washington, D.C., January 9-13, 2022. Poster.
- "Defining Safety-Critical Scenarios for Simulation-Based Automated Vehicle Evaluation". SAFER-SIM UTC Webinar, November 30, 2021. Webinar Talk.
- "Safety Effects of Transit Signal Priority: Magnitude and Mechanism". CTEDD Webinar, July 30, 2020. Webinar Talk.
- "People's Attitudes Toward Autonomous Vehicles and Transit in Small Urban Areas". The 99th TRB Annual Meeting, Washington, D.C., January 12-16, 2020. Podium.

- “Traffic Control Options at Originally All-Way Stop-Controlled Intersections with Autonomous Vehicles and Human-Driven Vehicles Mixed Traffic”. The 2019 Mid-Continent Transportation Research Symposium, Ames, IA, August 21, 2019. Poster.
- “An Economical Traffic Control Device for Originally Unsignalized Intersections with Autonomous Vehicles and Human-Driven Vehicles Mixed Traffic”. ASCE ICTD 2019, Alexandria, VA, June 9-12, 2019. Podium.
- “Assessing Effects of Transit Signal Priority on Traffic Safety: Empirical Bayes Before-After Study Using King County, Washington, Data”. The 97th TRB Annual Meeting, Washington, D.C., January 7-11, 2018. Podium.
- “A Corridor-Level Evaluation of GPS-Based Transit Signal Priority”. ASCE ICTD 2016, Houston, TX, June 26-29, 2016. Podium.
- “Evaluation of GPS-Based Transit Signal Priority for Mixed-Traffic Bus Rapid Transit”. The 95th TRB Annual Meeting, Washington, D.C., January 10-14, 2016. Poster.

## **GRANTS**

### **UConn**

NCHRP 03-142 Evaluating the Impacts of Real-Time Warnings and Variable Speed Limits on Safety and Travel Reliability during Weather Events (TRB), Role: Key Personnel

### **UW-Madison**

Defining Safety-Critical Scenarios for Simulation-Based Automated Vehicle Evaluation (SAFER-SIM UTC), Role: Key Personnel

Safety Effects of Transit Signal Priority: Magnitude and Mechanism (CTEDD UTC), Role: Co-PI

## **OTHER PROJECT EXPERIENCE**

### **UConn**

Consumer Reports Pilot: Driver Reactions to Disengagement of Automated Driving Systems Under Various Distractions (Consumer Reports)

Evaluation of Pavement Marking on Machine Vision Lane Detection Performance (CTDOT)

### **UW-Madison**

Park Street Connected Vehicle Corridor – Simulation Evaluation of Multimodal Intelligent Traffic Signal System (MMITSS) Application (City of Madison)

Integrating Autonomous Vehicles into Transit Services for Shared Prosperity: Public Engagement and Needs Assessment (UW-Madison Tommy G. Thompson Center on Public Leadership)

Design Standards for Unobstructed Sight Lines at Left-turn Lanes (MnDOT)

NCHRP 03-125: Evaluation of Change and Clearance Intervals Prior to the Flashing Yellow Arrow Permissive Left-Turn Indication (TRB)

NCHRP 20-05, 48-11: Practices in One Lane Traffic Control on a Two-Lane Rural Highway (TRB)

HSIP Projects Cost-Benefit Analysis (WisDOT)

### **U of Utah**

Classification/Regression Tree and Random Forest Models for Traffic Safety Analysis (FHWA)

Evaluation and Improvement of Major Corridor Capacity in Salt Lake City, UT (UDOT, UTA)

Improving Efficiency and Reliability of Bus Rapid Transit (Mountain-Plains Consortium, UTA)

## **SERVICE**

### **Paper Reviewer**

Accident Analysis and Prevention  
IEEE Transactions on Intelligent Transportation Systems  
IEEE Vehicular Technology Magazine  
Journal of Transportation Engineering, Part A: Systems  
Reliability Engineering and System Safety  
Transportation Research Record  
TRB Annual Meeting  
Urban, Planning and Transport Research

### **Grant Proposal Reviewer**

Center for Transportation, Equity, Decisions and Dollars (CTEDD UTC)

### **Professional Organization Membership**

Member, TRB Standing Committee on Transit Safety and Security (AP080)  
Member, American Society of Civil Engineers (ASCE)  
Member, Institute of Transportation Engineers (ITE)

### **Student Organization Leadership**

President (2019 – 2020) – ITE Student Chapter (UW-Madison)  
President (2015 – 2016) – ASCE-T&DI Graduate Student Chapter (U of Utah)

## **HONORS AND AWARDS**

### **Personal Honors and Awards**

UW-Madison Health-Oriented Transportation Innovation Scholar (2020)  
ITE Wisconsin Section Harvey Shebesta Award (2019)

### **Organizational Awards**

ITE Midwestern District Momentum Award for ITE Student Chapter (2020)  
CTEDD UTC Student Group Support Award for ITE Student Chapter (2020)