

Yao-Jan Wu, Ph.D., P.E.

Associate Professor

Director of Smart Transportation Lab

Director of Center for Applied Transportation Sciences (CATS)

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1 PERSONAL INFORMATION

1.1 Education

Ph.D. in Transportation Engineering Dept. of Civil and Environmental Engineering, University of Washington (UW), Seattle	Jun. 2006 - Dec.2010
M.S. in Transportation Engineering Dept. of Civil Engineering, National Taiwan University (NTU), Taipei, Taiwan	Sep. 2002 - Jun. 2004
B.S. in Civil Engineering <i>with honors</i> Dept. of Civil Engineering, National Central University (NCU), Chungli, Taiwan	Sep. 1998 - Jun. 2002

1.2 Research Interests

- Intelligent transportation systems (ITS)
 - Image processing and computer vision applications
 - Traffic detection technology development
 - Advanced/information technology applications
- Data-driven large-scale transportation system analysis and optimization
 - Freeway and arterial operations
 - Transportation system performance measurement
 - Big traffic data management, mining, and analysis
 - Travel behavior and pattern analysis
- Transportation safety analysis and accident modeling
- Sustainable transportation systems
 - Sustainable infrastructure
 - Transit system planning & operations

1.3 Awards and Honors

- Outstanding Reviewer (“Outstanding Contribution in Reviewing”), Transportation Research Part C, Feb. 2018.
- 2017 LeadershipITE Fellow. Institute of Transportation Engineers (ITE). Washington DC. Aug. 2017.
- 2014 Outstanding English Editing Chair Award, The 14th COTA International Conference of Transportation Professionals (CICPT), Chinese Oversea Transportation Association (COTA), Jul. 7, 2014.

- **2013 Professor of the Year (Excellence at the Student Interface)**, Department of Civil Engineering and Engineering Mechanics, University of Arizona, May 13, 2014.
- **2010 Michael Kyte Award¹**, Region X Outstanding Student of the Year, Jan. 24, 2011.
- **2010 UTC (Region X) Outstanding Student of the Year²**, TransNow, Region X UTC., Jan. 22, 2011.
- **Guiding Star Award³**, Smart Transportation Applications and Research Laboratory (STAR Lab), June 15, 2009.
- **Institute of Transportation Engineers (ITE) Scholarship: Outstanding Graduate Student in Transportation**, by ITE Washington State Section, May 13, 2008.

1.4 Work Experience

- **Founder/Director of [Center for Applied Transportation Sciences \(CATS\)](#)** Jan. 2021 – Present
- **Founder/Director of [Smart Transportation Lab](#)** Aug. 2013 – Present
- **Associate Professor** July. 2019 – Present
Department of Civil and Architectural Engineering and Mechanics (CAEM), University of Arizona (UA)
- **Assistant Professor** Aug. 2013 – May 2019
Department of Civil Engineering and Engineering Mechanics (CEEM), University of Arizona (UA)
- **Assistant Professor & Founder/Director of [Smart Transportation Lab](#)** Aug. 2011 - Jul. 2013
Department of Civil Engineering, Saint Louis University
- **Postdoctoral Research Associate** Jan. 2011 - Jul. 2011
Center of Transportation Studies, University of Virginia
- **ITS Intern Engineer** Oct. 2010 - Dec. 2010
Department of Transportation, City of Bellevue, WA
- **Traffic Engineering Intern** May 2010 - Aug. 2010
Traffic Engineering Division, City of Everett, WA
- **Graduate Research Assistant** Jun. 2006~ Dec. 2010
Smart Transportation and Application Research Laboratory (STAR Lab)
Department of Civil and Environmental Engineering, University of Washington, Seattle
- **Research Assistant** Mar. 2006 - Jun. 2006
Intelligent Transportation System (ITS) Lab, National Taiwan University, Taiwan
- **Transportation Platoon Leader (second lieutenant)** Oct. 2004 - Jan. 2006
Subordinate Company of Brigade 904, Taiwan Army, Taichung, Taiwan
- **Graduate Research Assistant** July 2002 - Oct. 2004
ITS Lab, Graduate Institute of Civil Engineering, National Taiwan University, Taiwan

1.5 Licenses

- Professional Engineer (PE)
 - Civil (**Missouri**): Lic. No. 2013019132 (May 2013)
 - Civil (**Arizona**): Registration No. : 62501 (June 24, 2016)
- Engineer-In-Training (EIT) – Civil (Washington State) (Lic. No. 31596)
- Certified Tennis Coach (Class C), Taiwan (2000)
- Emergency Medical Technician 1 (EMT1), Taiwan (2003)

¹ Nominees for the award were Students of the Year drawn from Region X's respective University Transportation Centers (UTC).

² Recognized by the U.S. Department of Transportation (USDOT) at the Council of University Transportation Centers (CUTC) Banquet at the 90th Annual Transportation Research Board (TRB) meeting.

³ Awarded to the student who made the most contributions to STAR Lab management in the areas of training, services, equipment purchases, and maintenance over the previous year.

2 RESEARCH ACTIVITIES

Summary: **40+** sponsored research projects as PI or Co-PI. **60+** refereed journal articles, **70+** peer-reviewed conference papers, **15+** technical reports, and **100+** professional presentations (besides conference paper presentations)

2.1 Projects and Grants

Career Contracted Budget (my credit only): \$4,945,888

Center Operating Fund

Total Contracted Budget (my credit only): \$450,000

Role	Project Title	Funding Agency	Project Period	Total Amount (My Credit)
PI	Center for Applied Transportation Sciences (CATS) – Membership Fees	ADOT	FY2023 – <u>Upcoming</u>	\$50,000
		Tucson Department of Transportation and Mobility		TBD
		Pima Count DOT		TBD
		ADOT	FY2022 – <u>Ongoing</u>	\$50,000
		Tucson Department of Transportation and Mobility		\$100,000
		Pima County DOT		\$250,000

Sponsored Research Projects

Total Contracted Budget (my credit only): \$4,495,888 (\$4,393,743 at UArizona/\$102,145 at SLU))

ID	Role	Project Title	Funding Agency	Project Period	Total Amount (My Credit Only)
43	PI ⁴	Investigating Road User’s Compliance of Yellow and Clearance Time Intervals for Signal Timing Design	City of Phoenix	5/1/2022 - 4/30/2023 <u>– Ongoing</u>	\$312,588 ⁵

⁴ Co-PI: Abolfazl Karimpour (ended on 8/21/2022)

⁵ Subcontractor: Co-PI: Matt Nordstrom at AM Signal (\$199,962)

42	Co-PI⁶	<i>NCHRP 03-144: Leveraging Existing Traffic Signal Assets to Obtain Quality Traffic Counts and Enhance Transportation Monitoring Programs</i>	National Academies of Sciences: NCHRP ⁷ (Sub to TTI)	4/1/2022 - 9/30/2024	\$119,950 ⁸
41	PI	<i>Optimizing Traffic Signals Using Multi-Source Data: Phases 1 - 6⁹</i>	City of Tucson, AZ	08/2017 - 08/2023 <i>- Ongoing</i>	\$750,000
40	PI¹⁰	<i>Comprehensive Literature Review for Traffic Signal Timing Issues/Events Related to Red-Light Running</i>	City of Phoenix, AZ	12/2021 – 5/2022 <i>- Ongoing</i>	\$15,000
39	PI¹¹	<i>Region-Wide Traffic Performance Evaluation and Performance Measure Development Using Multi-Source Data</i>	Pima Association of Governments (PAG)	12/1/2021-4/30/2023 <i>- Ongoing</i>	\$100,315
38	PI¹²	<i>Traffic Signal Performance Measurement: Case Study of McDowell Rd.</i>	City of Phoenix, AZ	11/2021 -6/2022 <i>- Ongoing</i>	\$20,000
37	PI¹³	<i>Feasibility Assessment for Adaptive Signal Control (ASC) System</i>	Town of Gilbert, AZ	03/2021-10/2022 <i>- Ongoing</i>	\$90,755
36	PI¹⁴	<i>Statistical Comparisons of Traffic Data for Traffic Signal Re-Timing</i>	City of Phoenix, AZ	03/2021 – 05/2022 <i>- Ongoing</i>	\$90,000
35	PI	<i>Automated Data Collection and Analysis for Arterial Traffic Operations</i>	Town of Marana, AZ		
		Phase 1 ¹⁵		11/2019 – 08/2020	\$30,000
		Phase 2 ¹⁶		08/2020 – 08/2021	\$50,000
		Phase 3 ¹⁷		09/2021 - 08/2022 <i>- Ongoing</i>	\$50,000
34	PI	<i>Technical Support for Metropia Data Analytics & DynusT Modeling</i>	Metropia Inc.		
		Phase 1		09/2020 – 06/2021	\$99,407

⁶ PI at UA but co-PI of the project. The project PI is Dr. Ioannis Tsapakis at Texas A&M Transportation Institute

⁷ National Cooperative Highway Research Program (NCHRP)

⁸ The total project budget is \$450,000

⁹ \$125,000 per year (phase). Phases 5 and 6 Co-PI: Dr. Xiaofeng Li

¹⁰ Co-PI: Dr. Abolfazl Karimpour

¹¹ Co-PI: Dr. Xiaofeng Li

¹² Co-PI: Dr. Abolfazl Karimpour

¹³ Co-PI: Dr. Xiaofeng Li

¹⁴ Co-PI: Dr. Abolfazl Karimpour

¹⁵ Co-PI: Dr. Mohammad Shaon

¹⁶ Co-PI: Dr. Abolfazl Karimpour

¹⁷ Co-PI: Dr. Abolfazl Karimpour

		Phase 2 ¹⁸		09/2021 - 06/2022 <i>- Complete</i>	\$99,488 (50% Credit: \$49,744)
33	Co-PI ¹⁹	<i>Data-Driven Optimization for E-Scooter System Design</i>	National Institute for Transportation & Communities (USDOT National University Transportation Center)	08/2020 – 1/2022 <i>- Complete</i>	\$12,848
32	PI	Traffic Data Analytics Platform Development for TSMO – Expansion of Ramp Metering Evaluation Tool	Arizona DOT	05/2020 – 07/2022 <i>- Ongoing</i>	\$200,000
31	PI	Comparative Analysis and Integration of Region-Wide Traffic Data	Pima Association of Governments (PAG)	01/2020 – 11/2021	\$133,424
30	PI	Evaluation of Emerging Transportation Technologies: Case Studies in Phoenix and Chandler.	Maricopa Association of Governments (MAG)		
		Phase 1 ²⁰		12/2019 – 01/2021	\$84,518
		Phase 2 ²¹		01/2021 – 12/2021	\$56,713
29	PI	Evaluation of Emerging Transportation Technologies: MAG Public Universities Task Force Support	Maricopa Association of Governments (MAG)		
		Phase 1		12/2019 – 06/2021	\$13,062
		Phase 2		07/2021-06/2022 <i>- Ongoing</i>	\$12,642
28	PI ²²	<i>Data-Driven Mobility Strategies for Multi-Modal Transportation</i>	National Institute for Transportation & Communities (USDOT National University Transportation Center)	09/2019 – 05/2021	\$55,586

¹⁸ Co-PI: Dr. Alyssa Ryan (50% Credit: \$49,744)

¹⁹ PI: Dr. Jianqiang Cheng. Total budget: \$67,619.

²⁰ Co-PI: Dr. Mohammad Shaon

²¹ Co-PI: Dr. Abolfazl Karimpour

²² Co-PIs: Dr. Xianfeng Yang, University of Utah/ Dr. Sirisha Kothuri, Portland State University. Total budget: \$137,608

27	PI	Tech Support for Transportation Network Management System	Pima County DOT		
		Phase 1 ²³		05/2020 – 06/2021	\$50,000
		Phase 2 ²⁴		04/2021 – 10/2021	\$30,000
26	Co-PI ²⁵	<i>Development of Low-Cost Radar-Based Sensor for Multi-Modal Traffic Monitoring</i>	National Institute for Transportation & Communities (USDOT National University Transportation Center)	09/2019 – 04/2021	\$10,986
25	PI	<i>Data Analytics for Traffic Signal Optimization</i>	Pima County DOT	07/2019 – 06/2021	\$150,000
24	Co-PI ²⁶	<i>Land Use and Transportation Policies for a Sustainable Future with Autonomous Vehicles: Scenario Analysis with Simulations</i>	National Institute for Transportation & Communities (USDOT National University Transportation Center)	08/2018 – 08/2020	\$41,666
23	PI	Multi-Criteria Evaluation of Advanced Traffic Management Systems	City of Phoenix, AZ	05/2019 – 03/2020	\$78,500
22	PI	<i>Engineering Training for Traffic Signal Timing Optimization</i>	City of Phoenix, AZ	12/2019 – 11/2020	\$46,398
21	Co-PI ²⁷	<i>Development of a Regional Plan for Enhancing Future of Mobility and Technology</i>	Maricopa Association of Governments (MAG) – Subcontract from ASU	02/2019 – 12/2019	\$23,932
20	PI ²⁸	Pima County Speed Management Evaluation and Strategic Development: Data-Driven Enforcement	Pima County DOT, AZ	12/2017 – 12/2019	\$80,000
19	PI	Data-Driven Evaluation for ADOT Ramp Metering	Arizona DOT	05/2018 – 08/2019	\$120,102

²³ Co-PI: Dr. Mohammad Shaon

²⁴ Co-PI: Dr. Abolfazl Karimpour

²⁵ PI: Dr. Siyang Cao, ECE Department, University of Arizona. Total budget: \$66,571

²⁶ PI: Dr. Liming Wang, Portland State University

²⁷ PI: Dr. Ram Pendyala, Arizona State University

²⁸ Co-PI: Dean Papajohn. Total budget: \$100,000

18	Key ²⁹	Developing a Quality of Signal Timing Performance Measure Methodology for Arterial Operations	University of Nevada, Reno/Nevada DOT	12/2017 – 09/2019	\$11,000
17	PI	Before-and-After Traffic Study for Indirect Left Turns on Grant Road, Tucson – <u>Phases 1 and 2 completed. Separate contract created for Phase 3.</u>	Regional Transportation Authority (RTA)	10/2016 – 05/2018	\$45,193
16	PI	Traffic Study for Indirect Left Turns on Grant Road, Tucson – After Phase 2: Stone/Park Construction	RTA/Subcontract from Psomas Inc.	09/2019 – 06/2020	\$17,400
15	PI	Evaluation of Traffic Signal Communication	Arizona DOT	03/2016 – 09/2018	\$118,364
14	PI	Visualizing Performance Measures with Multi-Source Traffic Data	Jiangsu (Zhitong) Intelligent Transportation System Co, Ltd.	10/2015 – 08/2018	\$200,000
13	PI	Incorporating Freeway Performance Measures into Real-Time Crash Prediction	Arizona DOT	10/2016 – 05/2018	\$60,000
12	PI	SHRP2 Implementation Assistance Program (IAP): Reliability Data and Analysis Tools	Federal Highway Administration (FHWA)/Arizona DOT	10/2016 – 09/2017	\$100,000
11	PI	University of Arizona Bluetooth Solution – Oracle Rd Travel Time Data Collection	Pima Association of Government (PAG) / Arizona DOT	11/2015 – 08/2017	\$30,000
10	PI	Analyzing Travel Time Data: Development of Traffic Data Quality Assurance Tool	Arizona DOT	02/2016 – 12/2016	\$93,482
9	PI	Metropia App Quality Assurance and Data Examination	Metropia, Inc.	09/2015 – 01/2017	\$84,490
8	PI ³⁰	Multi-modal Arterial Performance Measurement using Multi-source ITS Data	University of California Center ON Economic Competitiveness In Transportation (UCCONNECT),	08/2014 – 10/2015	\$30,000
7	PI ³¹	The Real-Time Signal Timing and Traffic Information Project (Tucson Bluetooth Systems Deployment)	City of Tucson, AZ	04/2014 – 12/2015	\$114,000
6	Co-PI ³²	A Real-time Online Decision Support System for Intermodal Passenger Travel	National Center for Intermodal Transportation for Economic	08/2013 – 07/2015	\$60,000

²⁹ Key Personnel. PI: Dr. Zong Tian, University of Nevada, Reno

³⁰ Co-PI: Dr. Yi-Chang Chiu's credit (50% of Total Budget of \$60,000)

³¹ PI's credit: about 63% of original budget of \$180,000. Original PI: Dr. Larry Head.

³² **PI:** Dr. Mengqi Hu at Mississippi State University. Total project budget: \$156,726.

			Competitiveness (NCITEC)		
5	PI ³³	Freeway Travel Time Estimation using Existing Fixed Traffic Sensors (Phase 2)	Missouri Department of Transportation (MoDOT)	08/2013 – 12/2014	\$51,423
4	PI	Development of Online Traffic Data Platform for Advanced Traffic Operations and Management	President Research Fund (PRF) at SLU	03/2013 – 02/2014 <i>Terminated due to leaving SLU for UA.</i>	\$25,000
3	PI	Development of a Region-wide Traffic Emission Estimation Platform for Environmental Sustainability Evaluation	Sustainability Research Fund (Center for Sustainability at SLU)	10/2012 – 12/2013	\$32,037
2	PI	Freeway Travel Time Estimation using Existing Fixed Traffic Sensors (Phase 1)	Missouri Department of Transportation (MoDOT)	09/2012 – 09/2013	\$45,108
1	Co-PI ³⁴	Housing and Urban Development (HUD) Grant: Sustainable Communities Regional Planning Grant Program	U.S. Department of Housing and Urban Development	2010 - 2013	

2.2 Journal Publications

*: Student advised or co-advised. #: Co-adviser

- 1 Liang Xia*, Xiaofeng Li, Mohammad Razaur Rahman Shaon, **Yao-Jan Wu**, and Xinguo Jiang (2022). Arterial Signal Offset Optimization Using Crowdsourced Speed Data. Accepted by Transportation Research Record.
- 2 Peipei Xu, Xiaofeng Li, **Yao-Jan Wu**, and Hyunsoo Noh (2022). Network-Level Turning Movement Counts Estimation using Traffic Controller Event-Based Data. Journal of Intelligent Transportation Systems. DOI: 10.1080/15472450.2022.2075701 ([PDF](#))([Official Link](#))
- 3 Xiaoling Luo*, Xiaobo Ma*, Matthew Munden*, **Yao-Jan Wu**, and Yangsheng Jiang (2022). A Multi-Source Data Approach for Estimating Vehicle Queue Length at Metered On-Ramps. ASCE Journal of Transportation Engineering, Part A: Systems. Vol. 148. Issue 2. ([PDF](#))([Official Link](#))
- 4 Xiaofeng Li*, **Yao-Jan Wu**, and Alireza Khani (2021). *Investigating a Small-Sized Bike-Sharing System's Impact on Transit Usage: A Synthetic Control Analysis in Tucson, Arizona*. Public Transport. <https://doi.org/10.1007/s12469-021-00278-w> ([PDF](#))([Official Link](#))
- 5 Mohammad Razaur Rahman Shaon, Xiaofeng Li, **Yao-Jan Wu**, and Simon Ramos (2021). *Quantitative Evaluation of Advanced Traffic Management Systems using Analytic Hierarchy Process*. Transportation Research Record 2675, no 12, pp.610–621. ([PDF](#))([Official Link](#))

³³ Co-PI: Dr. Zhaozheng Yin, Missouri University of Science & Technology, Rolla. Total budget: 77,000. Matching fund project: Freeway Travel Time Estimation using Existing Fixed Traffic Sensors - A Computer-Vision-Based Vehicle Matching Approach. Matching fund of \$38,681 from Mid-America Transportation Center

³⁴ PI: Dr. Sarah L. Coffin. Total budget: \$4.7 million. SLU's portion: \$662,191

- 6 Abolfazl Karimpour, Jason C. Anderson, Sirisha Kothuri, and **Yao-Jan Wu** (2021). *Estimating pedestrian delay at signalized intersections using high-resolution event-based data: a finite mixture modeling method*, Journal of Intelligent Transportation Systems, DOI: 10.1080/15472450.2021.1926246. ([PDF](#))([Official Link](#))
- 7 Xiaofeng Li*, Peipei Xu*, and **Yao-Jan Wu** (2021). *Pedestrian Crossing Volume Estimation at Signalized Intersections using Bayesian Additive Regression Trees*. Journal of Intelligent Transportation Systems. DOI: 10.1080/15472450.2021.1933471 ([PDF](#)) ([Official Link](#))
- 8 Xiaoling Luo*, Adrian Cottam*, **Yao-Jan Wu**, and Yangsheng Jiang (2021). *Hybrid-Data Approach for Estimating Trip Purposes*. Transportation Research Record 2675, no.11, pp. 545-543. ([PDF](#))([Official Link](#))
- 9 Abolfazl Karimpour*, Robert Kluger, Chenhui Liu, and **Yao-Jan Wu** (2021). *Effects of speed feedback signs and law enforcement on driver speed*. Transportation Research Part F: Traffic Psychology and Behaviour, Vol. 77, pp. 55-72, ISSN 1369-8478 ([PDF](#)) ([Official Link](#)).
- 10 Xiaofeng Li* and **Yao-Jan Wu** (2021). *Real-Time Estimation of Pedestrian Volume at Button-Activated Midblock Crosswalks Using Traffic Controller Event-Based Data*. Transportation Research Part C. Vol. 122. ([PDF](#))([Official Link](#))
- 11 Amin Ariannezhad*, Abolfazl Karimpour*, Xiao Qin, **Yao-Jan Wu**, and Yasamin Salmani (2021). *Handling Imbalanced Data for Real-Time Crash Prediction: Application of Boosting and Sampling Techniques*. Journal of Transportation Engineering Part A. Vol. 137, Issue 3. ([PDF](#))([Official Link](#))
- 12 Abolfazl Karimpour*, Rob Kluger, and **Yao-Jan Wu** (2021). *Traffic Sensor Data-Based Assessment of Speed Feedback Signs*. Journal of Safety and Security. DOI: 10.1080/19439962.2020.1731038 ([PDF](#))([Official Link](#))
- 13 Xiaofeng Li*, Adrian Cottam*, **Yao-Jan Wu**, and Alireza Khani (2020). *Can a Bikesharing System Reduce Fuel Consumption? Case Study in Tucson, Arizona*. Transportation Research Part D: Transport and Environment. Vol. 89. ISSN 1361-9209. ([PDF](#))([Official Link](#))
- 14 Xiaobo Ma*, Abolfazl Karimpour*, and **Yao-Jan Wu** (2020). *Statistical Evaluation of Data Requirement for Ramp Metering Performance Assessment*. Transportation Research Part A: Policy and Practice. Vol 141. pp. 248-261. ([PDF](#))([Official Link](#))
- 15 Huanmei Qin, Xiuhan Yang, **Yao-Jan Wu**, Hongzhi Guan, Pengfei Wang, and Nasrin Shahinpoor (2020), *Analysis of Parking Cruising Behaviour and Parking Location Choice*. Transportation Planning and Technology. Vol 43, Issue 7, pp. 717-734. ([Official Link](#))([PDF](#))
- 16 Amin Ariannezhad* and **Yao-Jan Wu** (2020). *Large-Scale Loop Detector Troubleshooting Using Clustering and Association Rule Mining*. ASCE Journal of Transportation Engineering. Volume 146, Issue 7. ([PDF](#))([Official Link](#))
- 17 Amin Ariannezhad*, Abolfazl Karimpour* and **Yao-Jan Wu** (2020). *Incorporating Mode Choice into Safety Analysis in Transportation Analysis Zones*. ASCE Journal of Transportation Engineering. Vol. 146, Issue 4. ([PDF](#))([Official Link](#))
- 18 Abolfazl Karimpour*, Amin Ariannezhad* and **Yao-Jan Wu** (2019). *Hybrid-Data-Driven Approach for Truck Travel Time Imputation*. IET Intelligent Transport Systems. Volume 13, Issue 10, p. 1518 – 1524. ([PDF](#)) ([Official Link](#))
- 19 Huanmei Qin#, Jianqiang Gao*, **Yao-Jan Wu**, and Hai Yan (2019). *Analysis on context change and repetitive travel mode choices based on a dynamic, computational model*. Transport Policy. Volume 79, Pages 155-164. ([Official Link](#)) ([PDF](#))
- 20 Xiaofeng Li*, **Yao-Jan Wu**, and Yi-Chang Chiu (2019). *Volume Estimation Using Traffic Signal Event-Based Data from Video-Based Sensors*. Transportation Research Record: Journal of the Transportation Research Board. ([Official Link](#))([PDF](#))
- 21 Xiaofeng Li*, Alexander Weber*, Adrian Cottam*, and **Yao-Jan Wu** (2019). *Impacts of Changing from Permissive/Protected Left-Turn to Protected-Only Phasing. Case Study in the City of Tucson, Arizona*. Transportation Research Record: Journal of the Transportation Research Board. ([Official Link](#))([PDF](#))
- 22 Wenming Rao*, **Yao-Jan Wu**, Jingxin Xia#, Jishun Ou* and Robert Kluger (2018). *Origin-Destination Pattern Estimation based on Trajectory Reconstruction Using Automatic License Plate Recognition Data*. Transportation Research Part C. Vol. 95, pages 29-46.([Official Link](#))([PDF](#))

- 23 Jishun Ou*, Shu Yang*, **Yao-Jan Wu**, Chengchuan An*, Jingxin Xia# (2018). *Systematic Clustering Method to Identify and Characterise Spatiotemporal Congestion on Freeway Corridors*. IET Intelligent Transport Systems. Vol. 12, Issue 8. ([Official Link](#))([PDF](#))
- 24 Amin Arianezhad* and **Yao-Jan Wu** (2018). *Effects of Adverse Weather in Different Light Conditions on Crash Severity During Arizona's Monsoon Season*. Journal of Transportation Safety & Security. Volume 11 Issue 6. Pages 579-594. ([Official Link](#))([PDF](#))
- 25 Zheng Li*, Robert Kluger, Xianbiao Hu, **Yao-Jan Wu**, and Xiaoyu Zhu (2018). *Reconstructing Vehicle Trajectories to Support Travel Time Estimation*. Transportation Research Record: Journal of the Transportation Research Board. Vol 2672, Issue 42, pp. 148–158 ([Official Link](#)) ([PDF](#))
- 26 Huanmei Qin, Jianqiang Gao, Robert Kluger, **Yao-Jan Wu** (2018), *Effects of perception on public bike-and-ride: A survey under complex, multifactor mode-choice scenarios*, Transportation Research Part F: Traffic Psychology and Behaviour, Volume 54, April 2018, pp. 264-275. ([Official Link](#))([PDF](#))
- 27 Shu Yang*, Ming Chen*, **Yao-Jan Wu**, and Chengchuan An* (2018). *Machine Learning Approach to Decomposing Arterial Travel Time Using a Hidden Markov Model with Genetic Algorithm*. ASCE Journal of Computing. Vol. 32, Issue 5. (Published online in advance) ([Official Link](#)) ([PDF](#))
- 28 Shu Yang* and **Yao-Jan Wu** (2018), *Travel Mode Identification Using Bluetooth Technology*, Journal of Intelligent Transportation Systems. Volume 22, Issue 5, pp. 407-421 ([Official link](#))([PDF](#))
- 29 Chengchuan An*, **Yao-Jan Wu**, Jingxin Xia#, and Wei Huang# (2018). *Real-Time Queue Length Estimation using Event-Based Advance Detector Data*. Journal of Intelligent Transportation Systems. Vol.22, Issue 4, pp.277-290. ([Official Link](#)) ([PDF](#))
- 30 Shu Yang*, Chengchuan An*, **Yao-Jan Wu**, and Jingxin Xia# (2017). *Taxicab Availability: Empirical Study of Kunshan, China*. Transportation Research Record: Journal of the Transportation Research Board, No. 2650. Doi: 10.3141/2650-06. ([Official Link](#)) ([PDF](#))
- 31 Jishun Ou*, Jingxin Xia#, **Yao-Jan Wu**, and Wenming Rao* (2017). *Short-Term Traffic Flow Forecasting for Urban Roads Using Data-Driven Feature Selection Strategy and Bias-Corrected Random Forests*. Transportation Research Record: Journal of the Transportation Research Board, No. 2645. Doi: 10.3141/2645-17. ([Official Link](#))([PDF](#))
- 32 Chengchuan An*, **Yao-Jan Wu**, Jingxin Xia#, and Zhenbo Lu. (2017) *Investigating Impacts of Communication Loss on Signal Performance Using Event-Based Data*. Transportation Research Record: Journal of the Transportation Research Board, No. 2645. Doi: 10.3141/2645-05. ([Official Link](#))([PDF](#))
- 33 Shu Yang*, Chengchuan An*, **Yao-Jan Wu**, and Jingxin Xia# (2017) *Origin-Destination Based Travel Time Reliability*. Transportation Research Record: Journal of the Transportation Research Board, No. 2643. doi: 10.3141/2643-16. ([PDF](#))([Official Link](#))
- 34 Xiaolei Ma, Congcong Liu, Huimin Wen, Yunpeng Wang, and **Yao-Jan Wu** (2017). *Understanding Commuting Patterns Using Transit Smart Card Data*. Journal of Transport Geography, Volume 58, pp. 135–145 ([Official Link](#))([PDF](#))
- 35 Yang Chen*, Shu Yang*, Menqi Hu# and **Yao-Jan Wu** (2016). *A Reliability-based Transit Trip Planning Model under Transit Network*. Public Transport. Vol. 8, Issue 3. pp 477–496. doi:10.1007/s12469-016-0134-y ([Official Link](#)) ([PDF](#))
- 36 Shu Yang*, **Yao-Jan Wu**, John Woolschlager (2016). *Integrated Modeling Framework for Highway Traffic Pollution Estimation and Dispersion*. American Journal of Environmental Sciences. Vol. 12, Issue 3, pp. 140-151. DOI:10.3844/ajessp.2016.140.151. ([Official Link](#))([PDF](#))
- 37 Shu Yang* and **Yao-Jan Wu** (2016). *Mixture Models for Fitting Freeway Travel Time Distributions and Measuring Travel Time Reliability*. Transportation Research Record: Journal of the Transportation Research Board. 2594, pp. 95-106 ([Official Link](#)) ([PDF](#))
- 38 Shu Yang*, **Yao-Jan Wu**, Zhaozheng Yin and Yiheng Feng (2016). *Estimating Freeway Travel Times Using General Motors Model*. Transportation Research Record: Journal of the Transportation Research Board. 2594. pp. 83-94. ([Official Link](#)) ([PDF](#))
- 39 **Yao-Jan Wu**, Feng Chen, Chang-Tien Lu and Shu Yang* (2016). *Traffic Flow Prediction for Urban Networks Using a*

- Spatio-Temporal Random Effects Model*. Journal of Intelligent Transportation Systems. Vol.20, Issue 3, pp. 282-293. DOI:10.1080/15472450.2015.1072050 ([Official Link](#)) ([PDF](#))
- 40 Shu Yang*, **Yao-Jan Wu**, Bernadette Marion, and Isaac Moses (2015). *Identification of Transit Farebox Data Errors: Impacts on Transit Planning*. Public Transport, pp. 1-17. ([Official Link](#)) ([PDF](#))
- 41 Shu Yang*, Xuan Liu*, **Yao-Jan Wu**, John Woolschlager and Sarah Coffin (2015). *Can Freeway Traffic Volume Information Facilitate Urban Accessibility Assessment? - Case Study of the City of St. Louis*. Journal of Transport Geography, Vol. 44, pp. 65-75. ([Official Link](#)) ([PDF](#))
- 42 Zhenbo Lu#, Wenming Rao*, **Yao-Jan Wu**, Li Guo, and Jingxin Xia# (2015). *A Kalman Filter Approach to Dynamic OD Flow Estimation for Urban Road Networks Using Multi-Sensor Data*, Journal of Advanced Transportation. Vol. 49, No. 2, 2015, pp. 210-227. ([Official Link](#)) ([PDF](#))
- 43 Shu Yang*, Arif Malik# and **Yao-Jan Wu** (2014). *Travel Time Reliability using Hasofer Lind-Rackwitz Fiessler Algorithm and Kernel Density Estimation*. Transportation Research Record: Journal of the Transportation Research Board, Vol. 2442, pp. 85-95. ([Official Link](#)) ([PDF](#))
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2.3 Book Chapter

1. Abolfazl Karimpour and **Yao-Jan Wu** (2021). Freeway to arterial interfaces. International Encyclopedia of Transportation. Vol 4. pp. 162-168. United Kingdom: Elsevier Ltd. ([Official link](#))
2. Shu Yang and **Yao-Jan Wu** (2019). Chapter 4 - Data-Driven Approaches for Estimating Travel Time Reliability, Data-Driven Solutions to Transportation Problems, Pages 81-110, Elsevier, NY, USA. ([Official Link](#))

2.4 Peer-reviewed Conference Papers (with Proceedings)³⁵

*: Student advised or co-advised. #: Co-adviser

1. Xiaofeng Li, Adrian Cottam, and **Yao-Jan Wu** (2022). *Transit Arrival Time Prediction by Fusing GTFS and Crowdsourced Data*. Will be presented at the 101th Annual Meeting of the Transportation Research Board.
2. Zirui (Raymond) Huang, Chih-Wei Hsieh, Yi-Chang Chiu, and **Yao-Jan Wu** (2022). *Cooperative Demand Management Model Development and Solution Procedure for Large-Scale Multi-Day Special Events on Taiwan's Freeway Systems*. Will be presented at the 101th Annual Meeting of the Transportation Research Board.
3. Abolfazl Karimpour, Bailey Homan, **Yao-Jan Wu**, and Diahn Swartz (2022). *Modeling Red-Light Running Behavior at*

³⁵ Note that TRB proceeding papers published in other journals are included because Paper Numbers can be used to identify sessions and online materials. Also note that starting from 2018, TRB no longer provide full papers but TRB papers are considered as proceedings.

- Signalized Intersection: A Finite Mixture Modeling Approach*. Will be presented at the 101th Annual Meeting of the Transportation Research Board.
4. Peipei Xu*, Xiaofeng Li*, **Yao-Jan Wu**, and Hyunsoo Noh (2021). *Estimating Network-Level Turning Movement Counts using Traffic Controller Event-Based Data*. Presented at the 100th Annual Meeting of the Transportation Research Board.
 5. Liang Xia*, Xiaofeng Li*, Mohammad Razaur Rahman Shaon, **Yao-Jan Wu**, Xinguo Jiang (2021). *Arterial Signal Offset Optimization Using Crowdsourced Speed Data*. Presented at the 100th Annual Meeting of the Transportation Research Board.
 6. Xiaofeng Li* and **Yao-Jan Wu** (2021). *Estimating Real-Time Pedestrian Volume at Button-Activated Midblock Crosswalks*. Presented at the 100th Annual Meeting of the Transportation Research Board. *(Also accepted by Transportation Research Part C)*
 7. Xiaofeng Li*, Peipei Xu*, and **Yao-Jan Wu** (2021). *Estimating Pedestrian Crossing Volume at Signalized Intersections*. Presented at the 100th Annual Meeting of the Transportation Research Board. *(A similar article also accepted by Journal of Intelligent Transportation Systems)*
 8. Adrian Cottam*, Xiaofeng Li*, Mohammad Razaur Rahman Shaon, and **Yao-Jan Wu** (2021). *Investigating the Impacts of E-Scooters on Bike-sharing System Ridership: A Data-Driven Study in Tucson, Arizona*. Presented at the 100th Annual Meeting of the Transportation Research Board.
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 10. Abolfazl Karimpour*, Jason Anderson, Sirisha Kothuri, and **Yao-Jan Wu** (2021). *Estimating Pedestrian Delay at Signalized Intersections Using Finite Mixture Modeling*. Presented at the 100th Annual Meeting of the Transportation Research Board. *(also accepted for publication in Journal of Intelligent Transportation Systems)*
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 12. Xiaoling Luo*, Xiaobo Ma*, Matthew Munden, **Yao-Jan Wu**, and Yangsheng Jiang (2021). *Queue Length Estimation for Metered On-Ramps: A Multi-Source Data Approach*. Presented at the 100th Annual Meeting of the Transportation Research Board.
 13. Mohammad Razaur Rahman Shaon, Xiaofeng Li, **Yao-Jan Wu**, Simon Ramos (2021). *Quantitative Evaluation of Advanced Traffic Management Systems using Multi-Criteria Decision Analysis*. Presented at the 100th Annual Meeting of the Transportation Research Board. *(also accepted for publication in Transportation Research Record)*
 14. Xiaobo Ma*, Abolfazl Karimpour*, and **Yao-Jan Wu** (2020). *Statistical Evaluation of Data Requirement for Ramp Metering Performance Assessment: A Case Study of SR-51, Arizona*. Presented at the 99th Annual Meeting of the Transportation Research Board.
 15. Yang Liang, Xiaoqing Zeng, Xiaofeng Li*, Adrian Cottam*, and **Yao-Jan Wu** (2020). *Quantifying Mobility Impact of Pedestrian Hybrid Beacon Signal on Arterial Traffic: Case Study in Tucson, Arizona.* Presented at the 99th Annual Meeting of the Transportation Research Board.
 16. Abolfazl Karimpour*, Robert Kluger, Chenhui Liu, and **Yao-Jan Wu** (2020). *Does Periodic Law Enforcement Enhance the Effectiveness of Speed Feedback Sign? A Case Study in Pima County, Arizona*. Presented at the 99th Annual Meeting of the Transportation Research Board.
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 19. Xiaofeng Li*, **Yao-Jan Wu**, and Yi-Chang Chiu (2019). *Volume Estimation Using Traffic Signal Event-Based Data from*

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20. Xiaofeng Li*, Alexander Weber*, Adrian Cottam*, and **Yao-Jan Wu** (2019). *Impacts of Changing from Permissive/Protected Left-Turn to Protected-Only Phasing. Case Study in the City of Tucson, Arizona*. Presented at the 98th Annual Meeting of the Transportation Research Board.
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73. Yegor Malinovskiy, **Yao-Jan Wu**, and Yin Hai Wang (2008). *Video-Based Monitoring of Pedestrian Movements at Signalized Intersections*, Presented by Yegor Malinovskiy at the 87th Annual Meeting of the Transportation Research Board, Washington, D.C., USA. (also published in *Transportation Research Record*)
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76. **Yao-Jan Wu**, Feng-Li Lian, and Tang-Hsien Chang (2006). *Traffic Monitoring and Vehicle Tracking using Roadside Cameras*, Presented by Feng-Li Lian at the 2006 IEEE International Conference on Systems, Man, and Cybernetics, Taipei, Taiwan.
77. **Yao-Jan Wu**, Chun-Po Huang, Feng-Li Lian and Tang-Hsien Chang (2004). *Vision-based Driving Environment Identification for Autonomous Highway Vehicles*, Presented by **Yao-Jan Wu** at the IEEE International Conference on Networking, Sensing and Control, Taipei, Taiwan.
78. Tang-Hsien Chang, Chun-Hung Lin, Chih-Sheng Hsu, and **Yao-Jan Wu** (2003). *A Vision-Based Vehicle Behavior Monitoring and Warning System*, Presented by **Yao-Jan Wu** at the IEEE International Conference on Intelligent

Transportation Systems, Shanghai, China.

79. Jiann-Sheng Wu and **Yao-Jan Wu** (2002). *Analysis of the Relationship between Ramp Deployment and Potential Risks on the Expressway: A Case Study of Taipei Metropolitan Area*, (In Chinese). Presented by **Yao-Jan Wu** at the 17th Annual Conference for the Chinese Institute of Transportation, Chayi, Taiwan.

2.5 Technical/Project Reports

1. **Yao-Jan Wu**, Abolfazl Karimpour, Bailey Homan, Pouya Jalali Khalilabadi. *Data Analytics for Traffic Signal Optimization*. Pima County Department of Transportation. Sep. 2021.
2. **Yao-Jan Wu.**, Xianfeng (Terry) Yang, Sirisha Kothuri, Abolfazl Karimpour, Qinzheng Wang, and Jason Anderson. *Data-Driven Mobility Strategies for Multimodal Transportation*. NITC-RR-1298. Portland, OR: Transportation Research and Education Center (TREC), 2021 ([Official Link](#))
3. **Yao-Jan Wu**, Mohammad Razaur Rahman Shaon, and Xiaofeng Li (2020). *Multi-Criteria Evaluation of Advanced Traffic Management Systems (ATMS)*. City of Phoenix. May 2020.
4. **Yao-Jan Wu**, Adrian Cottam, and Xiaobo Ma (2019). *Data-Driven Evaluation for ADOT Ramp Metering: Developing Ramp Metering Evaluation Tool*. Nov. 2019.
5. **Yao-Jan Wu**, Rob Kluger, and Chengchuan An (2018). *Evaluation of Traffic Signal Communication, Arizona Department of Transportation (ADOT)*. Sep. 2018.
6. **Yao-Jan Wu** and Amin Arianneshad (2017). *Incorporating Freeway Performance Measurement into Real-Time Crash Prediction*, Arizona Department of Transportation (ADOT). Dec. 2017.
7. **Yao-Jan Wu** and Amin Arianneshad (2017). *Analyzing Travel Time Data: Development of Traffic Data Quality Assurance Tool*, Arizona Department of Transportation (ADOT). Mar. 2017.
8. **Yao-Jan Wu**, Yi-Chang Chiu, and Shu Yang (2016). *Multi-modal Arterial Performance Measurement using Multi-source ITS Data*, Submitted to University of California Center ON Economic Competitiveness In Transportation (UCCONNECT), Sep. 2016.
9. Mengqi Hu, **Yao-Jan Wu**, Yang Chen, and Shu Yang (2015). *A Real-time Online Decision Support System for Intermodal Passenger Travel*. Submitted to the National Center for Intermodal Transportation for Economic Competitiveness (NCITEC). ([Web link](#))
10. **Yao-Jan Wu**, Zhaozheng Yin, Shu Yang and Wenchao Jiang (2014). *Freeway Travel Time Estimation Using Existing Fixed Traffic Sensors - Phase 2*. Missouri Department of Transportation. TR201407. ([Web link](#))
11. **Yao-Jan Wu**, John Woolschlager and Shu Yang (2013). *Development of a Region-wide Traffic Emission Estimation Platform for Environmental Sustainability Evaluation*. Center for Sustainability, Saint Louis University.
12. **Yao-Jan Wu**, Shu Yang and Saber Abdoli (2013). *Freeway Travel Time Estimation Using Existing Fixed Traffic Sensors – Phase 1*. Missouri Department of Transportation. TR201311. ([Web link](#))
13. Yin Hai Wang, **Yao-Jan Wu**, Xiaolei Ma, and Jonathan Corey (2010). *Real-time Travel Time Prediction on Urban Traffic Network*, Transportation Northwest (TransNow), Project 61-7212.
14. Yin Hai Wang, Yegor Malinovskiy, **Yao-Jan Wu**, Un Kun Lee (2010). *Error Modeling and Analysis for Travel Time Data Obtained from Bluetooth MAC Address Matching*, Transportation Northwest (TransNow), Project 61-8390.
15. Yin Hai Wang, Yunteng Lao, **Yao-Jan Wu**, and Jonathan Corey (2010). *Identifying High-Risk Locations of Animal-Vehicle Collision for Washington State Highway*, Washington State Department of Transportation, Washington State Transportation Center (TRAC) and Transportation Northwest Regional Center X (TransNow).
16. Peter M. Briglia Jr., Emily Fishkin, Mark E. Hallenbeck, and **Yao-Jan Wu** (2010). *An Analysis of the Puget Sound In Vehicle Traffic Map Demonstration*, Washington State Department of Transportation, Report Number: WA-RD 737.1.
17. Yin Hai Wang, Jonathan Corey, Yunteng Lao, and **Yao-Jan Wu** (2009). *Development of a Statewide Online System for Traffic Data Quality Control and Sharing*, Transportation Northwest (TransNow), Project 61-6022.

18. Yin Hai Wang, Yegor Malinovskiy, and **Yao-Jan Wu** (2008). *Occlusion Robust Vehicle and Environment Insensitive Algorithm for Vehicle Detection and Tracking Using Surveillance Video Cameras*, Transportation Northwest Regional Center X (TransNow).
19. Mark E. Hallenbeck and **Yao-Jan Wu** (2007). *Review of Private Sector Data for Roadway Monitoring*, Washington State Transportation Center; University of Washington, Seattle; Federal Highway Administration.
20. Yin Hai Wang, Ngan Ha Nguyen, Atli Björn E. Levy, and **Yao-Jan Wu** (2007). *Cost Effective Safety Improvements for Two-Lane Rural Roads*, Transportation Northwest Regional Center X (TransNow).

2.6 Non-Peer-Reviewed Publications

1. **Yao-Jan Wu** and Tang-Hsien Chang (Aug. 2005). Intelligent Road Special Issue: Let's Make Driving Safer, Monthly Science, No. 428 (In Chinese), Taiwan.

2.7 Professional Presentations

Invited Talks

- 1.
2. *Innovative Data-Driven Solutions for Traffic Operations*. **Invited** by Department of Civil and Environmental Engineering, University of Pittsburgh, Apr. 8th, 2022.
3. *Center for Applied Transportation Sciences (CATS)*. **Invited** by Southern Arizona ITE. Feb. 18, 2022.
4. *Multi-Criteria Evaluation of Advanced Traffic Management Systems (ATMS)*. **Invited** by AzTech ITS & Signal Technician Task Force. Feb. 3rd, 2022
5. *Data-Driven Approaches for Traffic Operations*. **Invited** by Dr. Carlos Sun, Graduated Student Seminar, University of Missouri, Columbia.
6. *Multi-Criteria Evaluation of Advanced Traffic Management Systems (ATMS)*. **Invited** by AzTech. Aug. 19th, 2020
7. *Data-Driven Approaches for Traffic Operations*. **Invited** by Dr. Huey-Kuo Chen at National Central University, Chung-Li, Taiwan. Dec. 17th 2020.
8. *Data-Driven Approaches for Traffic Operations*. **Invited** by Dr. Yu-Chiun Chiou at National Chiao-Tung University, Taipei, Taiwan. May. 6th 2020.
9. *Human Library: Transportation Research*. **Invited by** Principal Yao-Wen Hsu. National Taichung Second Senior High School, Taiwan, July 7th, 2020
10. *Data-Driven Approaches To Traffic Operations*. **Invited** by Dr. Yu-Ting Hsu at National Taiwan University, Taiwan. Apr. 6th 2020.
11. *Data-Driven Solutions To Arterial and Freeway Operations Issues*. **Invited** by Dean Xiaobo Liu, Southwest Jiaotong University, Chengdu, China. July 11, 2019
12. *Importance of Educating for the Future Technologies of Multimodal TSMO*. **Invited** by ADOT, Advancing Multimodal TSMO in Arizona Technical Summit, June 19, 2019.
13. *Data-Driven Approaches for Traffic Operations and Management*. **Invited** by Prof. Jingxin Xia, ITS Institute of Southeast University, Nanjing China, May 29, 2019.
14. *Data-Driven Approaches for Traffic Operations and Management*. **Invited** by Prof. Cheng-Chieh (Frank) Chen, Department of Business Administration, & Graduate Institute of Logistics Management, National Dong Hwa University, Hualian, Taiwan, May 24, 2019.
15. Invited **Keynote**. *Handling traffic operations issues with data-driven approaches*. **Invited** by Dean Liang-Tai Lin, International Forum on Smart Cities, Feng-Chia University, Taichung, Taiwan, May 18, 2019.

16. Lunch **Keynote**: UA Transportation Research Institute: Overview., **Invited** by Pacific Southwest Regional University Transportation Center, PSR UTC Congress, Tucson AZ, Apr. 9, 2019
17. *UA Transportation Research Institute: Overview.* **Invited** by UA Tech Park, SWIFT Summit. Tucson, AZ, Jan 23, 2019.
18. *Optimizing Signals with Multi-Source Data, Case Studies and Best Practices in Tucson, AZ.* **Invited** by TRB Traffic Signal Systems Committee Summer Meeting, Flagstaff, AZ, July 22~23, 2018
19. Monitoring Network-Wide Arterial Performance: Practical Approaches and Research Methods. **Invited** by (Chinese Overseas Transportation Association) International Conference of Transportation Professionals (CICTP), Beijing, China, July 6~8, 2018.
20. Region-Wide Signal Performance Measurement – Case Studies and Best Practices in Arizona, USA. **Invited** by International Traffic Signal Control Forum, Tianjin, China, July 4, 2018
21. Data-Driven Approaches for Traffic Monitoring and Management - Case Studies in Arizona, USA. **Invited** by Dr. Yu-Min Su, National Kaohsiung University of Science and Technology, Kaohsiung, Taiwan. June 4, 2018
22. Data-Driven Approach for Arterial Traffic Management and Operations, **Invited** by Roads and Streets Conference, Tucson AZ, Mar. 9, 2018
23. Data-Driven Research for Arterial Traffic Operations. **Invited** by Prof. Zong Tian, University of Nevada, Reno, Feb. 8, 2018.
24. *24/7 Video-Sensor-Based Traffic Data Collection – Lesson Learned and Best Practices in the City of Tucson.* **Invited** by Southern Arizona Institute of Transportation Engineers. Feb. 16, 2018 (Co-presented with Paul Burton)
25. Data-Driven Performance Measurement and Analysis – Case Studies in Arizona. **Invited** by Brent Cain at ADOT TSMO Division. Jan 19, 2018.
26. How to Get Involved In A TRB Standing Committee: Secrets from the Pros. **Invited** by the National Operations Center for Excellence as a panelist. Oct. 11, 2017.
27. State-of-the-Art ITS Data-Driven Applications in Arizona, U.S. **Invited** by Prof. Kenji Doi. Osaka University and [International Association of Traffic and Safety Sciences \(IATSS\)](#). July 10, 2017.
28. Applications of Multi-Source Traffic Data on Arterial Streets: Case Studies in Tucson, Arizona, Fujian University of Technology, June 28, 2017. **Invited** by Prof. Tang-Hsien Chang.
29. Applications of Traffic Big Data in the US - From National, State and Local Perspectives, Xiamen University, June 27, 2017. **Invited** by Prof. Wantu Xu.
30. Before-and-After Traffic Study for Indirect Left Turns on Grant Road
- Phase 1. PAG / University of Arizona Transportation Research Seminar, Apr. 21, 2017. **Invited** by Dave Alter, PAG.
31. Modeling Arterial Traffic States with Multi-Source Traffic Data. **Invited** by Prof. Toshiyuki Yamamoto, Nagoya University, Aug 4, 2016.
32. Leveraging Multi-Source Real-Time Data for Arterial Performance Measurement, 16th COTA International Conference of Transportation Professionals (CICPT), Shanghai, China, July 6-9, 2016.
33. Partnership Between University and Local Transportation Agency. **Invited** by Simon Ramos. Traffic Operations Center (TOC) of the Arizona Department of Transportation, June 17, 2016.
34. Leveraging Multi-Source Real-Time Data for Arterial Performance Measurement – Case Study in the City of Tucson, Arizona. North American Travel Monitoring Exposition and Conference (NATMEC), Miami, FL, May. 1-4, 2016. **Invited** by Dr. Stanley Young.
35. Integrated Transportation Data-Driven Approach for Arterial Performance Measures. **Invited** by Simon Ramos at Arizona Department of Transportation, Tucson District. May 8th, 2015.
36. Low-cost Data-Driven Approach to Measuring Arterial Performance. **Invited** by Southern Arizona ITE Chapter. Mar. 20th, 2015.

37. Yao's Journey to Big Data. **Invited by** Dr. Wang Zhang at Maricopa Association of Governments. Sep 23rd, 2014.
38. Yao's Journey to Big Data. **Invited by** Prof. Xiaoguang Yang at Tongji University, China. July, 11, 2014.
39. Measuring Arterial Performance in a Big Data World, **Invited by** Dr. Xiaolei Ma at Beiheng University, Beijing, China, July 8th 2014.
40. Big Data Management, Mining, and Analysis in Traffic, [Rawls College 2014 Symposium on Big Data](#), Jerry S. Rawls College of Business Administration, Texas Tech University, Apr 25, 2014.
41. Arterial and Freeway Performance Measurement: From a Big Data Perspective. Arizona Conference on Roads & Streets. Apr. 16~18, 2014.
42. Arterial Performance Measurement: From a Big Data Perspective. **Invited** by 2014 ITE/IMSA Spring Conference, Phoenix. Mar. 5, 2014.
43. Yao's Journey to Big Data. Research Café. **Invited** by ADOT Transportation Research Center, Phoenix. Oct. 24, 2013.
44. Online Arterial Performance Measurement: Challenges, Methodology and Implementation. **Invited** by ITS Arizona Annual Conference. Sep 26th, 2013
45. Freeway Performance Measurement. **Invited** by Dr. Jiao Yao, Department of Transportation Engineering, and the University of Shanghai for Science and Technology, China. August 8th, 2013.
46. Freeway Performance Measurement. **Invited** by the Department of Transportation, Shangdong Province, China and coordinated by Dr. Baiyin Shi, Shandong Jianzhu University, China. August 6th, 2013.
47. Traffic Sensor Data-Based Arterial Performance Measurement: Methodology and Online Implementation. **Invited** by Dr. ManWo Ng, Old Dominion University. June 7th, 2013.
48. Scenario-based Climate Change Risk Analysis for Transportation Infrastructure using GIS. **Invited** by TRB Committee on Critical Transportation Infrastructure Protection (ABE40). Presented at TRB Risk Assessment Workshop: Part 2. Jan. 13th 2013.
49. Investigation of Key Contributing Factors in Vehicle Crashes in St. Louis. **Invited** by the Transportation Working Group ([TWG](#)), the Bagley College of Engineering, Mississippi State University. Oct. 23rd, 2012
50. Development of Intelligent Transportation Systems in St. Louis. **Invited talk** in the Department of Civil, Construction and Environmental Engineering, University of Alabama, Tuscaloosa. Oct. 22nd, 2012
51. Development of Intelligent Transportation Systems in St. Louis. **Invited talk** at the 2012 MCASTA annual symposium, St. Louis MO, Sep. 8th, 2012.
52. Arterial Performance Measurement –Data Collection, Management and Analysis, and Implementation. **Invited talk** at the [Intelligent Transportation System Research Center](#), Southeast University, Nanjing, China. Aug. 9th, 2012.
53. Intelligent Transportation System (ITS) Development and Research in the U.S. - In a Nutshell. **Invited talk** in the Department of Transportation and Communication Management Science at National Cheng-Kung University (NCKU), Taiwan. May. 24th, 2012
54. Intelligent Transportation System (ITS) Development and Research in the U.S. - In a Nutshell. **Invited talk** in the Department of Civil Engineering at National Taiwan University (NTU), Taiwan. May. 21st, 2012
55. *Online Arterial Performance Measurement: Challenges, Methodology and Implementation*. **Invited talk** in the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign (UIUC), IL. Dec. 2nd, 2011
56. *Online Arterial Performance Measurement: Challenges, Methodology and Implementation*. **Invited talk** in the Department of Civil Engineering at the Southern Illinois University Edwardsville (SIUE), IL. Nov. 16, 2011
57. *Development of a Web-based Arterial Network Analysis System for Real-time Decision Support*. **Invited talk** in the Department of Automation at the Tsinghua University, Beijing, China. Aug. 25th, 2011
58. *Development of a Web-based Arterial Network Analysis System for Real-time Decision Support*. **Invited talk** in

International Workshop on Transportation Construction and Management for Sustainable Development at the Harbin Institute of Technology. Harbin, China. Aug. 20th, 2011

59. Climate Change Vulnerability and Risk Assessments of Transportation Infrastructure - Introduction to Hampton Roads, Virginia Implementation Pilot, **Invited talk** in the Civil and Environmental Engineering. University of Washington, Seattle, WA, Apr.8th 2011.
60. *Traffic Sensor Data-Based Arterial Performance Measurement: Methodology and Online Implementation*, **Invited talk** in the Civil Engineering graduate student seminar. University of Virginia, Charlottesville, VA, Dec. 3rd 2010.
61. *Traffic Sensor Data-Based Arterial Performance Measurement: Methodology and Online Implementation*, **Invited talk** in the graduate student seminar, National Taiwan University, Taipei, Taiwan, Sep. 20th 2010.
62. *Traffic Sensor Data-Based Arterial Performance Measurement: Methodology and Online Implementation*, **Invited talk** in the graduate student seminar, National Central University, Chung-Li, Taiwan, Sep. 16th 2010.
63. *Digital Roadway Interactive Visualization and Evaluation Network (DRIVE Net): Prototype Development and Implementation*. **Invited talk** at the Puget Sound Regional Council (PSRC) Regional Traffic Operators Committee (RTOC) Meeting, Apr. 1st, 2010.

Conference and Poster Presentations (Without Proceedings)³⁶

64. **Yao-Jan Wu**, Traffic Engineering Essentials for Traffic Signal Technicians, Phoenix, 2022 Arizona ITE/IMSA Spring Conference, May 18th, 2022
65. **Yao-Jan Wu**, Adrian Cottam, and Steven Cheshko. SMART Way to Enhance Freeway Traffic: A Data-Driven Approach. ITS Arizona Annual Conference Oct. 14, 2020. (Online)
66. Abolfazl Karimpour and **Yao-Jan Wu**. *Data-Driven Approaches to Improving Traffic Operations*. Tucson, AZ Sep. 23, 2020. (Online)
67. Abolfazl Karimpour and **Yao-Jan Wu**. *University of Arizona & Pima County Speed Feedback Sign and Enforcement Study*. ITE Spring Conference. Phoenix, AZ, Feb. 26 – 27, 2020.
68. Simon Ramos and **Yao-Jan Wu**. *Multi-Criteria Based Matrix ATMS Comparison*. ITE Spring Conference. Phoenix, AZ, Feb. 26 – 27, 2020.
69. Xiaofeng Li and **Yao-Jan Wu**. *Advanced Applications of Crowdsourced Traffic Data*. ITS Arizona Annual Conference, Mesa, AZ. Sep. 20, 2019
70. **Yao-Jan Wu**. *New ADOT Ramp Meter Operation: Data-Driven Evaluation for ADOT Ramp Metering*. ITS Arizona Annual Conference, Mesa, AZ. Sep. 20, 2019
71. **Yao-Jan Wu**. *Data-Driven Solutions to Arterial Operations Issues*. NITC Summit, Portland OR. Sep. 19, 2019.
72. Abolfazl Karimpour and **Yao-Jan Wu**. *Data-Driven Evaluation for Speeding Issues*. ASCE State Conference, Phoenix, AZ, Sep. 13, 2019.
73. **Yao-Jan Wu**. *Data-Driven Solutions To Arterial Operations Issues*. The 19th COTA International Conference of Transportation Professionals. Nanjing, China. July 6-8, 2019.
74. **Yao-Jan Wu**. *Data-Driven Solutions To Freeway Operations Issues*. Pre-CICTP2019 Workshop “Big Data & Emerging Vehicle Technologies.” Beijing University of Technology, Beijing, China. July 4, 2019.
75. Abolfazl Karimpour and **Yao-Jan Wu**. *Developing Data-Driven Speed Management Strategies*. International Conference on Transportation & Development 2019. Alexandria, Virginia. June 9-12, 2019.
76. **Yao-Jan Wu**. *Applying Data-Driven Research to Real-World Traffic Operations Issues*. Arizona Conference on Roads

³⁶ TRB Annual Meeting presentations are counted as published conference proceedings because of its peer review process (< 50% acceptance rate)

- & Streets, Apr. 18, 2019.
77. Xiaofeng Li and **Yao-Jan Wu**. *Optimizing Traffic Signals Using Multi-Source Data*. National Rural Intelligent Transportation Systems Annual Conference, Phoenix, AZ, Oct. 21~24, 2018.
 78. **Yao-Jan Wu** and Paul Burton. Protected/Permissive vs. Protected Only Left-Turn Signal Phasing: Mobility vs. Safety. ASCE State Conference, Phoenix, AZ, Sep. 14, 2018.
 79. **Yao-Jan Wu** and Robert Kluger. *Quantifying Freeway Performance Measures using Multi-Source Traffic Data*. ASCE International Conference on Transportation and Development, Pittsburgh, PA, July 15~18, 2018.
 80. **Yao-Jan Wu** and Robert Kluger. *Data-Driven Approach for Traffic Signal Performance Measurement and Improvement*. ASCE International Conference on Transportation and Development, Pittsburgh, PA, July 15~18, 2018.
 81. **Yao-Jan Wu**, *Improving Accuracy of Video-Based Traffic Data at Signalized Intersections*, National Travel Monitoring Exposition and Conference (NaTMEC), Irvine CA. June 10~13, 2018.
 82. Amin Ariannzhad and **Yao-Jan Wu**, *Automatic Data Quality Control Tool for Large-Scale Loop Detector Troubleshooting*, National Travel Monitoring Exposition and Conference (NaTMEC), Irvine CA. June 10~13, 2018.
 83. **Yao-Jan Wu** and Abolfazl Karimpour. *Quantifying Freight Performance Measures Using Multi-Source Traffic Data*. ITE/IMSAS Spring Conference, Phoenix, AZ. Mar. 1, 2018
 84. **Yao-Jan Wu** and Paul Burton. *Data-Driven Research for Arterial Traffic Management*. ITE/IMSAS Spring Conference, Phoenix, AZ. Feb. 28, 2018
 85. **Yao-Jan Wu** and Zong Tian. *Data-Driven Performance Measurement for Freeways and Arterials in Arizona*. 2017 Arizona Conference on Roads & Streets, Apr. 13, 2017
 86. Robert Kluger and **Yao-Jan Wu**. *Evaluation of Traffic Signal Technologies*. ITE/IMSAS Spring Conference Mar. 1, 2017.
 87. **Yao-Jan Wu** and Chengchuan An. *Applications of Event-Based (High-Resolution) Traffic Signal Data*. ITS Arizona Annual Conference, Sep. 28-29, 2016.
 88. Shu Yang and **Yao-Jan Wu**. *Automatic Freeway Performance Reporting Using an Open Source Platform*, Presented by Shu Yang at North American Travel Monitoring Exposition and Conference (NATMEC) 2016, Miami, FL, May. 1-4, 2016.
 89. Chengchuan An, **Yao-Jan Wu**, and Amin Ariannzhad. *Evaluating Signal Performance Using High-Resolution Data*, Presented by Yao-Jan Wu, and Amin Ariannzhad at North American Travel Monitoring Exposition and Conference (NATMEC) 2016, Miami, FL, May. 1-4, 2016.
 90. **Yao-Jan Wu**, *Leveraging Multi-Source Real-Time Traffic Data to Improve Arterial Performance*. 2016 Arizona Conference on Roads & Streets, Mar. 24, 2016.
 91. **Yao-Jan Wu**, *Arterial Performance Measurement Using Multi-source Data*. ITS Arizona Annual Conference. Oct. 1, 2015.
 92. **Yao-Jan Wu**, *Integrated Transportation Data-Driven Approach for Arterial Performance Measures*. **Invited** by American Council of Engineering Companies of Arizona (ACEC) at Arizona Conference on Roads & Streets. Apr. 1st, 2015.
 93. **Yao-Jan Wu**, *Arterial Performance Measurement Using Low-Cost Bluetooth Detectors*. ITS Arizona Annual Conference. Sep 25th, 2014
 94. Saber Abdoli and **Yao-Jan Wu**, *Presenting a Spatial Decision Support Framework for Roadway Design*. Presented by Saber Abdoli. 14th Missouri GIS Conference, Chesterfield, Missouri, Feb. 19-21, 2013.
 95. Shu Yang, and **Yao-Jan Wu**, *GIS-based Spatio-Temporal Accident Analysis in St. Louis*. Presented by Shu Yang at 2012 [Annual TEAM Transportation Fair](#), St. Louis, MO, Sep. 27, 2012 (**Best Poster Award**). Presented by Shu Yang.
 96. Greg Bouche and **Yao-Jan Wu**, *Investigation of Key Contributing Factors in Vehicle Crashes in St. Louis: Weather, Lighting, Roadway Characteristics, Pavement, and Traffic Control*. Presented by Greg Bouche at the 2012 [Annual TEAM Transportation Fair](#), St. Louis, MO, Sep. 27, 2012 (**3rd Best Poster Award**).

97. Sijia Lu, Shu Yang, and **Yao-Jan Wu**, *Cost Estimation of Traffic Accidents in St. Louis using Geographic Information Systems*. Presented by Sijia Lu at the 2012 [Annual TEAM Transportation Fair](#), St. Louis, MO, , Sep. 27, 2012 (**2nd Best Poster Award**).
98. Sijia Lu, Shu Yang, and **Yao-Jan Wu**, *Cost Estimation of Traffic Accidents in St. Louis using Geographic Information Systems*. Presented by Sijia Lu at the 2012 Midwest Chinese American Science & Technology Association (MCASAT) annual symposium, St. Louis, MO, Sep. 8th 2012.
99. **Yao-Jan Wu**, Jonathan Corey, Un Kun Lee, and Yinhai Wang (2010), *High-resolution Detector Data Collection and Storage for Real-time Intersection Performance Measurement*. Presented at North American Travel Monitoring Exposition and Conference (NATMEC). June 21st~24th, 2010, Seattle, WA.
100. **Yao-Jan Wu**, Jonathan Corey, and Yinhai Wang (2010), *Digital Roadway Interactive Visualization and Evaluation Network: DRIVE Net*. ITE Washington State Section Annual Meeting, June 8th, 2010.
101. **Yao-Jan Wu**, Oran Viriyincy, and Li Leung (2009), *Safety Analysis and Improvement Proposal for the 35th Avenue SW Corridor, Seattle*, Presented at ITE Annual Meeting 2009, San Antonio, Texas, Aug. 10th, 2009.
102. **Yao-Jan Wu** and Yinhai Wang (2009), *Bellevue-related Research: GATI system and Interaction between Arterial and Freeway Performance: Case Study*, Presented to the Professional Panel at Bellevue City Hall, Mar.12th, 2009.
103. **Yao-Jan Wu** (2007), *A Google-Map-Based Arterial Traffic Information System*, 5th Annual TransNow Student Conference, Portland State University, Oregon, Nov. 16th, 2007.

Additionally, many of the conference papers listed in Section 2.4 were presented by myself.

2.8 Patent

Yegor Malinovskiy, Yinhai Wang and **Yao-Jan-Wu**. Video-based Vehicle Detection and Tracking Using Spatio-Temporal Maps, 12/987,854. U.S. Patent No. 8,358,808.

2.9 Media

1. APR: New University of Arizona research center established to help solve traffic issues. Mar. 9, 2022 ([Official Link](#))
2. AZ Engineering News. Mar. 4, 2022 ([Official Link](#))
3. KGUN9 News: New Proposed Plan to Change Lagging Left Light at Speedway. Nov. 27, 2019 ([Official Link](#))
4. KVOA, UArizona researcher working to make Speedway commute smoother. Nov. 26, 2019 ([Original Link](#))
5. AZPM FM89.1. Interview. Nov. 25, 2019.
6. UA News: Transportation Engineer Tackles Tucson's Traffic Flow. Nov. 18, 2019 ([Original Link](#))
7. KGUN9 News: City of Tucson, UA develop system to help with traffic signal timing ([Original Link](#)) ([Archive](#)). Published on Feb. 17th 2015. Last accessed on August 7, 2018.
8. Arizona Daily Star: Timing Tucson traffic signals will take more time ([Original Link](#)). Published on December 14th, 2014. Last accessed on August 7, 2018.

3 TEACHING ACTIVITIES

3.1 Courses Taught

Regular Courses (Instructor)

Semester	Course	Credits	Course Evaluation ³⁷	Enrollment
University of Arizona				
Fall 2021	CE 363 Transport Engineering and Pavement Design	4	N/A	29
	CE 363 AUPP	4	N/A	8
Spring 2021	CE462/562 Traffic Engineering and Operations	4	N/A ³⁸	12
Fall 2020	CE 363 Transport Engineering and Pavement Design	4	N/A ³⁹	40
	CE 363 AUPP	4	Co-Instructor	6
Fall 2019	CE 363 Transport Engineering and Pavement Design	4	N/A	33
	CE 363 AUPP ⁴⁰	4	Co-Instructor	5
	CE 596 A: Research Topics (Seminar)	1	(Co-Instructor)	24
Spring 2019	CE462/562 Traffic Engineering and Operations	3	Average: 4.5/5.0	20
Fall 2018	CE 363 Transport Engineering and Pavement Design	4	Average: 4.3/5.0	39
Spring 2018	CE 465/565 Transportation Data Management and Analysis	3	Average: U:4.6/5.0; G:4.3/5.0	16 (12U;4G)
Fall 2017	CE 363 Transport Engineering and Pavement Design	4	Average: 4.3/5.0	51
Spring 2017	CE462/562 Traffic Engineering and Operations	3	Average: U:4.7/5.0; G:4.5/5.0	22 (18U;4G)

³⁷ UA TCE Question: Overall rating of teaching effectiveness (Average).

³⁸ Due to COVID-19, teaching evaluation is not available.

³⁹ Due to COVID-19, teaching evaluation is not available.

⁴⁰ This class was taught by Xiaobo Ma, Ph.D. student of mine

Fall 2016	CE 363 Transport Engineering and Pavement Design	4	Average: 4.4/5.0	36
	CE 596 A: Research Topics (Seminar)	1	(Co-Instructor)	30
Spring 2016	CE 465/565 Transportation Data Management and Analysis	3	Average: U:4.8/5.0; G:4.3/5.0	12 (5U; 7G)
Fall 2015	CE 363 Transport Engineering and Pavement Design	4	Average: 4.3/5.0	49
Spring 2015	CE 460/560 Special Topic: Traffic Engineering and Operations	3	Average: 4.6/5.0	12 (6U; 6G)
Fall 2014	CE 363 Transport Engineering and Pavement Design	4	Average: 4.6/5.0	49
Spring 2014	CE 460/560 Special Topic: Transportation Data Management and Analysis	3	Average: 4.6/5.0	14 (11U;3G)
Fall 2013	CE 363 Transport Engineering and Pavement Design	3	Average: 4.5/5.0	39
Saint Louis University				
Spring 2013	CVNG 311 Transportation Engineering	3	Average: 9.3/10.0	13
	CVNG 312 Transportation Engineering Lab	1	Average: 9.2/10.0	13
	CVNG 150 Civil Engineering Computing	3	Average: 9.0/10.0	22
	CVNG 401 Senior Engineering	3	(Co-Instructor)	
	CVNG 593 Special Topics (4 sessions)		N/A	2
Fall 2012	CVNG 101 Freshmen Engineering	1	Average: 9.4/10.0	20
	CVNG 445/545 Traffic Engineering	3	Average: 8.9/10.0	9 (5U; 4G)
	CVNG 450 Capstone	3	(Co-Instructor)	
	CVNG 393 Special Topics-Traffic Studies	3	N/A	1

Spring 2012	CVNG 311 Transportation Engineering	3	Average: 8.5/10.0	22
	CVNG 312 Transportation Engineering Lab	1	Average: 8.7/10.0	22
	CVNG 150 Civil Engineering Computing	3	Average: 8.4/10.0	23
	CVNG 593 Special Topic: Traffic Studies	3	N/A	1
University of Washington (UW)				
Winter 2010	CEE 412/599 Transportation Data Management and Analysis (Instructor)		Median: 4.7/5.0 (27 Undergrads)) 4.4/5.0 (10 Grads))	37
Winter 2008 & 2009	CEE 412/599 Transportation Data Management and Analysis (Teaching Assistant)		N/A	

Invited Lectures

1. **Traffic Data Collection, Estimation, and Applications.** Invited lecture at the County of Nantou, Taiwan. July 24, 2020.
2. **Data-Driven Research for Arterial and Freeway Traffic Management.** Invited lecture in “Transportation Engineering and Technology” at National Cheng-Kung University by Prof. Shou-Ren Hu. June 6th, 2018. (3-hour lecture)
3. **Traffic Safety Research and Practices in the U.S..** Invited Lecture for “Taiwan Central Regional Transportation Center” (中區區域運輸發展研究中心) at Feng-Chia University, Taichung, Taiwan. June 5, 2018. (3-hour lecture)
4. **Traffic Management Strategies and Technologies in Arizona, U.S..** Invited lecture in “Transportation Geography (交通地域デザイン学)” at Osaka University by Prof. Kenji Doi. July 11, 2017.
5. **Traffic Detection Technologies in the U.S.** Invited lecture in “Transportation Technology” at National Cheng-Kung University in Taiwan by Prof. Shou-Ren Hu, May 23rd, 2012.
6. **Image Processing Applications in Transportation Engineering.** Invited lecture in ECE551 (Image Processing) at SLU by Prof. Will Ebel, May 3rd, 2012.
7. **Traffic Simulation Analysis.** Invited lecture in CVNG 101(Freshman Engineering) at SLU by Prof. John Woolschlager, Dec. 5th, 2011.
8. **Adaptive Signal Control,** Invited lecture in CE 6460 (Integrated Transportation Systems Models) by Prof. Brian Park, University of Virginia, Charlottesville, VA, Apr. 28th 2011.
9. **Intelligent Transportation Systems,** Invited lecture in CEE 320 (Transportation Engineering) by Prof. Anne Goodchild, University of Washington, Seattle, WA, Oct. 15th 2010.

3.2 Advising/Supervising

Research Staff

Name	Dates	Current Position
Dr. Xiaofeng Li	Sep. 2021 – Present	Assistant Research Professor
Kathy (Chia-Yu) Chen	June 2021 – March 2022	Research Specialist
Peipei Xu ⁴¹	Fall 2019 – Present	Research Specialist
Zhang Xi	July 2021- May 2022	Research Specialist
Dr. Abolfazl Karimpour	Aug. 2021 – Aug. 2022	Assistant Research Professor
Dr. Abolfazl Karimpour	Jan. 2021 – Aug. 2021	Post-doctoral Researcher
Dr. Mohammad Razaur Rahman Shaon	Aug. 2019 – Oct. 2020	Post-doctoral Researcher Research Associate. University of Connecticut as of 2021
Dr. Robert Kluger	Fall 2016 - Spring 2018	Post-doctoral Researcher. Assistant Professor, University of Louisville as of 2019
Dr. Shu Yang	Jan. 2017 - Aug. 2017	Post-doctoral Researcher, Post-doctoral Researcher, University of South Florida as of 2018

Ph.D. Students : 11 students

Name	Degree	Dates	Thesis/Dissertation Topic
Pouya Jalali Khalilabadi	Ph.D.	Fall 2021 – Present	TBD
Pramesh Pudasaini	Ph.D.	Fall 2021 – Present	TBD
Adrian Cottam	Ph.D.	Spring 2019 ⁴² - Present	TBD
Melrose (Meiyu) Pan	Ph.D.	Fall 2020 ⁴³ - Fall 2021	TBD by Dr. Alyssa Ryan
Zirui (Raymond) Huang	Ph.D.	Fall 2020 ⁴⁴ – Present	TBD
Xiaobo Ma	Ph.D.	Fall 2018 - Present	TBD
Xiaofeng Li	Ph.D.	Fall 2017~ Aug. 2021	High-Resolution Data-based Methods for Arterial Traffic Volume Estimation
Abolfazl Karimpour	Ph.D.	Fall 2016 ~ Fall 2020	Data-Driven Approaches for Assessing the Impact of Speed Management Strategies for Arterial Mobility and Safety
Amin Arianneshad	Ph.D.	Fall 2014 ~ Fall 2019	Data-Driven Safety Modeling Approaches for Transportation Operations and Planning
Shu Yang	Ph.D.	Spring 2012 ~ Fall 2016	Estimating Freeway Travel Time Reliability for Traffic Operations and Planning
Ming Chen	Ph.D.	Fall 2014 ~ Discontinued in Spring 2016	N/A

Master Students: 12 students

Name	Degree	Dates	Thesis/Dissertation Topic/Research
Bailey Elizabeth Homan	M.E.	Starting in Spring 2022 but transferred to Dr. Alyssa Ryan in the same semester	<i>(Non-thesis Master) – Accelerated ME</i>
Yu-Qiu (Rachael) Yuan	M.E.	Fall 2019 ~ Fall 2020	<i>(Non-thesis Master)</i>
David Allen Klebosky	M.E.	Fall 2018~ Spring 2019	<i>(Non-thesis Master)</i>
Adrian Cottam	M.E.	Fall 2018~ Spring 2019	<i>(Non-thesis Master): Helped data analytics for</i>

⁴¹ Peipei is also a visiting scholar

⁴² Adrian are in both Ph.D. and M.E. programs in Spring 2019

⁴³ Dr. Yi-Chang Chiu was her PhD advisor for Fall 2019 – Spring 2020. Then, I was her advisor for Fall 2020 – Summer 2021 before she is officially transferred to Dr. Alyssa Ryan at the end of Fall 2021.

⁴⁴ Dr. Yi-Chang Chiu was his PhD advisor for Fall 2019 – Spring 2020

			<i>multiple projects</i>
JT Dang	M.E.	Fall 2018~ Spring 2019	<i>(Non-thesis Master)</i>
Matthew Munden	M.E.	Fall 2017~ Spring 2018	<i>(Non-thesis Master): Helped data collection</i>
Alex John Weber	M.E.	Fall 2017~ Spring 2018	<i>(Non-thesis Master): Helped the City of Tucson project</i>
Ahmad Fakhouri	M.E.	Fall 2014 ~ Fall 2015	<i>(Non-thesis Master)</i>
Payton Cooke	M.S.	Summer 2015 ~ Fall 2016	Comparative Analysis of Multiple Data Sources for Travel Time and Delay Measurement
Jue Zhang	M.E in ECE	Spring 2016~ Spring 2017	<i>(Non-thesis Master) – Not Advisor</i>
Zheng Li	M.S.	Fall 2015 ~ Summer 2017	Improving Estimation Accuracy of GPS-based Arterial Travel Time Using k-Nearest Neighbors Algorithm
Kiet Dao	M.E.	Spring 2016 ~ Spring 2017	<i>(Non-thesis Master)</i>

Visiting Scholars: 12 scholars

Name	Title ⁴⁵	Dates	Thesis/Research Topic
Peipei Xu	Visiting Scholar	Fall 2019 – Present	
Liliana Salas	Ph.D. Student at UA iSchool (STL Lab Affiliate)	Fall 2019 – Spring 2020	
Liang Xia	Visiting Ph.D. Student	Oct. 2019 ~ Oct. 2020	Arterial Traffic
Yen-Fei Huang	Visiting Scholar	Feb. 2019 ~ Aug. 2019	Traffic signal systems and transportation technology literature review
Yang Liang ⁴⁶	Visiting M.S. student	Aug. 2018~ July 2019	Pedestrian delay/safety
Xiaoling Lou ⁴⁷	Visiting Ph.D. Student	Sep. 2018 ~ Mar. 2020	Freeway operations
Dingxin Wu	Visiting Ph.D. Student/Assistant Professor	Aug. 2017~Feb, 2018	Public transit
Guiliang Zhou	Visiting Ph.D. Student /Assistant Professor	Aug. 2017~Feb, 2018	High occupancy lane
Ke Meng	Visiting M.S. student	Summer 2017 ~ Fall 2017	Computer vision
Chengchuan An ⁴⁸	Visiting Ph.D. Student	Fall 2014 ~ Spring 2016	Traffic signal systems
Wenming Rao ⁴⁹	Visiting Ph.D. Student	Fall 2016~ Fall 2017	O/D estimation/traffic simulation
Jishun Ou ⁵⁰	Visiting Ph.D. Student	Fall 2016~ Fall 2017	Big freeway data
Hamid Mirzahosseini	Visiting Ph.D. Student	Summer 2014 - Fall 2014	

Undergraduate Students: 27 students

University of Arizona (2013~ Present)			
Name	Title	Date	Topic(s) or Duties
Cynthia Eduwiges	Lab Trainee	Summer 2022	Data collection

⁴⁵ Most of students are/were pursuing CEEM degrees

⁴⁶ M.S. Student. Tongji University, China.

⁴⁷ On his Ph.D. committee. Southwest Jiaotong University.

⁴⁸ On his Ph.D. committee. Southeast University, China. Primary Advisor: Dr. Jingxin Xia.

⁴⁹ On his Ph.D. committee. Southeast University, China. Primary Advisor: Dr. Jingxin Xia.

⁵⁰ On his Ph.D. committee. Southeast University, China. Primary Advisor: Dr. Jingxin Xia.

Navarro			
Gabriel Gedaliah Geffen ⁵¹	Lab Trainee	Spring 2022	TBD
	Undergraduate Research Assistant	Summer 2022-Present	Website Administrator, research website development, CATS center support
Yusef Nasser Alnuaimi	Lab Trainee	Spring 2021-Present	TBD
Muhammad Luqman Mohd-Rizal	Lab Trainee	Summer 2021 – Fall 2021	Data collection
	TA	Fall 2021	CE363
Dylan Molina	Lab Trainee	Summer 2021 – Present	Research website development
Bailey Elizabeth Homan	Undergraduate Research Assistant	Summer 2021 – Fall 2021	Data collection and analysis
	Lab Trainee	Spring 2021	
Taylor Scott Davis	Lab Trainee	Spring 2021	Data collection
	Undergraduate Research Assistant	Fall 2021 – Spring 2022	Website administrator Project marketing support
Alex Pulido	Lab Trainee; Teaching Assistant	Fall 2019 ~ Spring 2021	Data collection TA for CE363 in Fall 2020
Ashley Arleen Avila	Lab Trainee	Fall 2019 ~ Present	Traffic data analysis
Josh Swain	Undergraduate Research Assistant	Spring 2020 ~ Spring 2021	Traffic data collection
Chris Ackerman	Lab Trainee	Fall 2019	
Kossigan Djidjonya	Lab Trainee	Fall 2019	
Eric Huettner	Undergraduate Research Assistant	Spring 2019 ~ Fall 2019	ATMS Evaluation & CE363 Online course development
Lilly Grace Cottam	Undergraduate Research Assistant	Apr. 2019 ~ Present	Literature review assistance
Ruben Miranda	Undergraduate Research Assistant	Summer 2019 ~ Fall 2019	Traffic data collection
Joel Hernandez	Lab Shadow Program by ASEMS ⁵²	Spring 2018	Traffic Data Collection
Sal Licari	Lab Trainee	Spring 2018	Traffic Signal Data Analytics
Nicholas Quinn Tritz	Lab Trainee	Spring 2017~ Fall 2017	Bluetooth Devices
Adrian Blyth Cottam	Undergraduate Research Assistant	Spring 2017~ Summer 2018	Development of Big Transportation Data Platform
Mohammed Nabil Al-Turkait	Undergraduate Lab Trainee (Visiting Student)	Fall 2016	Bluetooth Data Collection; Traffic Signal Project Support
Mariana Valle Eguren	Visiting Student	Spring 2016	Pedestrians and Bikes
Chanlin Wong	Undergraduate Research Assistant	Spring & Fall 2016	Traffic Data Collection
	Teaching Assistant	Fall 2016	
Dylan Patel	Undergraduate Research Assistant	Spring, Fall 2016	Traffic Data Collection
Romulo Federizzi Moraes	Visiting Undergraduate Research Assistant	Summer 2015	Traffic Engineering Training

⁵¹ Last name changed from “Ruskin” to “Geffen” in Apr, 2022.

⁵² Arizona's Science, Engineering and Math Scholars (ASEMS)

Kiet Dao	Undergraduate Research Assistant	Spring 2015	GPS Data Collection for Signal Re-timing
Anthony Huynh Giang	Undergraduate Research Assistant	Summer~ Fall, 2014	Transportation Web System Development
Ryan Brown	Teaching Assistant	Fall 2013	CE363: Transport Engineering and Pavement Design
	Undergraduate Research Assistant	Spring 2014	Tucson Bluetooth Project: Device Installation
Joel Amarillas	Undergraduate Research Assistant	Spring/Summer 2014	Tucson Crash Data Analysis
Ahmad Fakhouri	Teaching/Research Assistant	Spring 2014	CE 460/560: Transportation Data Management and Analysis (for project training)

High School

Name	Title	Date	Topic(s)
Katie Ogg	High School Trainee	Spring 2017	Training for Traffic Data Analytics

M.S. Committee

Name	Major Advisor	Semester
Yifan Zhao	Nan Feng	Fall 2015
Jason Andrew Freitas	Yi-Chang Chiu	Summer 2015
Marcos Urbano Esparza	Mark Hickman	Spring 2014
Paul Hoffer	Yi-Chang Chiu	Fall 2013

Ph.D. Dissertation Committee

Name	Ph.D. Degree	Preliminary Exam	Final Exam	Minor Adviser
Andisheh Ranjbari	Civil		Spring 2018	
Ali Arian	Civil	Fall 2017	Fall 2018	
Zuoyu Miao	System & Industrial	Spring 2018	Fall 2018	Yes
Byungho Beak	System & Industrial	Fall 2016	Summer 2017	Yes
Mehdi Zamanipour	System & Industrial	Spring 2015	Summer 2016	Yes
Ahmad Mohassel ⁵³	Economics	Fall 2014	TBD	
Ye Tian	Civil	Fall 2014	Summer 2015	
Yiheng Feng	System & Industrial	Fall 2014	Summer 2015	
Lei Zhu	Civil	Spring 2014	Fall 2014	
Brenda I. Bustillos	Civil	Fall 2013	Spring 2015	

Saint Louis University (2011~2013)

Name	Title	Date	Topic(s)
Michael Loseille	Website Manager	Spring~Summer 2013	Website Management
Xuan Liu	Visiting Scholar	2012~2013	Transportation Accessibility
Huicheng Chien ⁵⁴	Visiting Scholar	2012~2013	Climate Change
Adnan Gabeljic	Summer Undergraduate Research Experience (SURE)	Summer 2013	Traffic Safety

⁵³ Doctor of Philosophy in Economics

⁵⁴ As of 2018, Assistant Professor at SUNY New Paltz

	Scholar		
Anis Dokic	Student Worker	Spring 2013	MoDOT project traffic data collection
Justin Schmeltz	Undergraduate Research Assistant	Spring 2013	Transportation/Hydrology
Gregory Bouche	SURE Scholar and Undergraduate Research Assistant	Jan. 2012~ May 2013	Statistical Safety Analysis
	Teaching Assistant	Fall 2012	CVNG 101
Ryan Hughes	Honors Program Capstone	Sep. 2012~May 2013	Great Streets
Ryan McNeely	Undergraduate Research Assistant	Nov. 2012~ May 2013	Web-Based Visualization System
Phillip Pierson	Undergraduate Research Assistant	Jan. 2012~ May 2013	Traffic Data Quality
Tiffany Rando	Undergraduate Research Assistant	Jan. 2012~ May 2013	EXCEL VBA-Based Travel Time System
	Teaching Assistant	Spring 2013	CVNG 150
Sijia Lu	Undergraduate Research Assistant	May. 2012~ Present	GIS-Based Traffic Safety Analysis
Hung-Shuo (David) Tai	Graduate Research Assistant	Fall 2012	Traffic Data Analysis
Kyle Donahue	Special Topic (one credit): Research Report	Jan. 2013~ May 2013	Traffic Data Quality Assurance

3.3 Major Student Awards

Year	Student Name	Awards
2022	Xiaobo Ma	Jenny L. Grote Student Leadership Award: Institute of Transportation Arizona Section (ITE AZ)
2022	Xiaobo Ma	Honorable Mention Award for the American Statistical Association TSIG Student Paper Competition
2021	Xiaobo Ma	ITS Arizona 28th Annual Conference Best Paper Award.
2021	Adrian Cottam	2021 Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Graduate Fellowship
2021	Xiaofeng Li	Outstanding Graduate Student Award , CAEM, College of Engineering
2020	Xiaofeng Li	Best Student Paper Award , ITS Arizona Annual Conference
2020	Abolfazl Karimpour	Outstanding Graduate Student Award , CAEM, College of Engineering
2019	Abolfazl Karimpour	Outstanding Graduate and Professional Student Leadership Award: Graduate and Professional Student Council at the University of Arizona
2019	Abolfazl Karimpour	Outstanding Graduate Student , ITE Western District
2019	Abolfazl Karimpour	Jenny L. Grote Student Leadership Award: Institute of Transportation Arizona Section (ITE AZ)
2019	Abolfazl Karimpour	Best Student Paper Award. The 26th Annual ITS Arizona Conference
2018	Adrian Blyth Cottam	Outstanding Undergraduate Student , SAITE Hank Warner Memorial Scholarship, Southern Arizona Chapter of the Institute of Transportation Engineers
2018	Abolfazl Karimpour	Outstanding Graduate Student , SAITE Hank Warner Memorial Scholarship, Southern Arizona Chapter of the Institute of Transportation Engineers
2018	Adrian Blyth Cottam	NITC (National Institution for Transportation and Communities) Student Scholar Award
2017	Amin Ariannezhad	Best Student Paper Award , ITS Arizona Annual Conference

2016	Chengchuan An	Best Student Paper Award , ITS Arizona Annual Conference
2016	Shu Yang	Outstanding Graduate Student Award , College of Engineering, University of Arizona
2014	Shu Yang	Outstanding Student Award: SAITE Hank Warner Memorial Scholarship , Southern Arizona Chapter of the Institute of Transportation Engineers
2012	Shu Yang	Best Student Paper Award . Annual Transportation Engineering Association of Metropolitan (TEAM) Transportation Fair, , St. Louis, Missouri

4 PROFESSIONAL ACTIVITIES

4.1 Professional Services (Membership)

- Transportation Research Board (TRB)
 - **University Representative** (2012 ~ Present)
 - Primary contact in establishing and maintaining an effective working relationship between the University of Arizona and the TRB
 - Committee on Highway Traffic Monitoring (ACP70 – used to be ABJ35)
 - **Official Young Member** (May 7th, 2008 ~ Apr. 2016)
 - **Official Member** (Apr. 15, 2016 ~ Apr. 14, 2022)
 - Committee on Urban Transportation Data and Information Systems (ABJ30): **Official Young Member** (Apr. 15, 2011 ~ Apr. 1, 2017)
 - Subcommittee on Travel Time Speed and Reliability: **Member** (2015~ Present)
 - Archived Data User Services (ADUS) subcommittee (of ABJ35): **Member** (2009~2013)
 - Committee on User Information Systems (AND20): Committee Friend (2008 ~ Present)
 - Committee on Information Systems and Technology Committee (ABJ50): Committee Friend (2011 ~ Present)
 - Committee on Performance Measurement (ABC30) Committee Friend (2012~ Present)
- Professional Organization Memberships:
 - American Society of Civil Engineers (**ASCE**) (2009 ~ 2014, 2017~Present)
 - Chinese Overseas Transportation Association (**COTA**) (2008 ~ Present)
 - Institute of Transportation Engineers (**ITE**) (2006 ~ Present)
 - Transportation Engineering Association of Metropolitan St. Louis (TEAMStL) (2011~ 2013)
 - Southern Arizona ITE Member (2013 ~ Present)

4.2 Professional Services

University of Arizona (2013 ~ Present)

<u>National Outreach</u>	
2021 – Present	Conference Planning Committee Member, National Travel Monitoring Exhibition and Conference (NaTMEC) , 2022.
2020 – Present	FHWA Traffic Monitoring Guide Expert Panel Member. Invited by Office of Highway Policy Information, Federal Highway Administration.
2019 – Present	Panel Member: NCHRP 08-127 Emerging Issues: Impact of New Disruptive Technologies on the Performance of DOTs.
2019 - 2021	Conference Planning Committee Member, National Travel Monitoring Exhibition and Conference (NaTMEC) , June 1~4, 2020. (Changed to 2021 due to COVID-19)
2018	Session Chair , Session 309, Innovations in Collecting and Applying Traffic Data, TRB Annual Meeting, Washington DC, Jan. 8th, 2018
2017	Member , International Academic Committee, 17th International Conference of Chinese, Transportation Professionals (ICCTP 2014), July. 7-9, 2017, Shanghai, China

2016 - 2018	Conference Planning Committee Member, N ational T ravel M onitoring E xhibition and C onference (NaTMEC), June 10-13, 2018.
2015	Web-based Communication Chair and International Technical Committee Member , First IEEE International Smart Cities Conference (ISC2-2015) , Oct 2015
2015	Deputy Chair , 7th International Symposium on Travel Demand Management , Tucson, Arizona, Apr. 13-15, 2015.
2015	Advisor (Volunteer Consultant), Smart City Group Inc., Taiwan.
2015	Co-Chair , TRB Taiwanese Transportation Researchers/Professionals Reception and Technical Information Exchange. Jan 11, 2015, Washington DC, USA.
2014	Organizing Committee Member , 14 th International Conference of Chinese Transportation Professionals (ICCTP 2014), July. 4-7, 2014, Changsha, China
2014 - Present	International Adviser , China Urban Transport Database Project, invited by China Urban Sustainable Research Center (CUSTReC) in China Academy of Transportation Sciences (CATS)
2014	Chair , TRB Taiwanese Transportation Researchers/Professionals Reception and Technical Information Exchange, Washington DC, USA. Jan 12, 2014
<u>International Outreach</u>	
2016	Invited International Expert , Database on Urban Public Transport project (Phase 2): Monitoring and Evaluating Systems for Urban Public Transport Development Levels in the “Transit Metropolis” Cities of China. Invited by China Urban Sustainable Research Center (CUSTReC) in China Academy of Transportation Sciences (CATS). May. 23~25, 2016
2015	Invited International Expert , Database on Urban Public Transport project (Phase 2): Monitoring and Evaluating Systems for Urban Public Transport Development Levels in the “Transit Metropolis” Cities of China. Invited by China Urban Sustainable Research Center (CUSTReC) in China Academy of Transportation Sciences (CATS). Apr. 22~24, 2015
2013	Invited International Expert Reviewer , Database on Urban Public Transport project (Midterm Evaluation). Invited by China Urban Sustainable Research Center (CUSTReC) in China Academy of Transportation Sciences (CATS). July 27~31, 2013

<u>Local/State Outreach</u>	
2022	Chair , CATS Mobility Symposium
2020 ~ Present	Member , Arizona Council for Transportation Innovation
2019 ~ Present	Primary Member , Maricopa Association of Governments (MAG)-Public University Task Force
2016	Organizing Committee Member , ADOT Transportation Research Summit
2016	Adviser , PAG Congestion Management Process (CMP) Project
2015 ~ 2019⁵⁵	Coordinator , PAG-UA Transportation Research Seminar
2015	UA Coordinator , ADOT Research Summit, 2015
2014	Coordinator , ADOT-UA Research Seminar at UA
2014 ~ Present	UA Representative , PAG Transportation Systems Subcommittee / RTA Safety Working Group

⁵⁵ To my best knowledge, the activities stopped in 2019 or 2018.

<u>University Services</u>	
<u>Department</u>	
2022	Member, Geo Tech Faculty Search Committee
2021	Chair , Cyber-Physical (Transportation Focused) Faculty Search Committee
2020	Member, Cyber-Physical Faculty Search Committee
2017 ~ Not active as of 2019	CEEM Outstanding Young Alumni Award Selection Committee
2019 ~ Present	Member, Graduate Studies Committee, Civil Engineering
2013 ~ 2019	Member, Undergraduate Studies Committee, Civil Engineering
2015 ~ 2020	Annual Performance Evaluation Committee, Civil Engineering
2013 ~ Not active as of 2020	Scholarship Committee, Civil Engineering
2013 ~ Present	Faculty Advisor , ITE Student Chapter
2014 ~ 2016	Coordinator, UA Transportation Group Seminar
<u>College</u>	
2017	Member, UA CEEM Department Head Search Committee
<u>University</u>	
2018 ~ Present	Faculty Advisor , Arizona Taiwanese Student Association
2017 ~ Present	Scholarship Committee Member , National Institute for Transportation and Communities (NITC) University Transportation Center (UTC)
2015 ~ Present	Faculty Advisor , UA Tennis Club
2018 ~ 2019	Steering Committee Member , Transportation Research Institute

Saint Louis University (2011~2013) – Assistant Professor

<u>Local/State Outreach</u>	
2013	Program Co-Chair , 2013 Midwest Chinese American Science & Technology Association (MCASTA) Annual Symposium, Sep. 7, 2013, St. Louis, MO, USA.
2012	Program Co-Chair , 2012 Midwest Chinese American Science & Technology Association (MCASTA) Annual Symposium, Sep. 8, 2012, St. Louis, MO, USA.
<u>International Outreach</u>	
2013	Primary Organizer , 2013 TRB Taiwanese Transportation Researchers/Professionals Reception and Technical Information Exchange, Jan, 13, 2013, Washington DC, USA.

2012	12 th COTA International Conference of Chinese Transportation Professionals (CICTP 2012), Aug. 3-6, 2012, Beijing, China <ul style="list-style-type: none"> ○ Members of <i>Organizing and Executive Committee</i> and <i>Academic Committee</i> ○ Session Chair (8/4/2011: Technical Session III: Traveler and Traffic Information and Control)
2012	Member of <i>International Technical Program Committee</i> , 15 th International IEEE conference on Intelligent Transportation Systems (ITSC 2012):
2012 ~ 2013	Midwest Chinese American Science & Technology Association (MCASTA): Board Member
2011	11 th International Conference of Chinese Transportation Professionals (ICCTP 2011), Aug. 14-17, 2011, Nanjing, China <ul style="list-style-type: none"> ○ Members of <i>Organizing and Executive Committee</i> and <i>Academic Committee</i> ○ Session Chair (8/17/2011: Technical Session VII: Traffic Safety and Emergency Management)

<u>Departmental Committee</u>	
2013	Member , Civil Engineering Faculty Search Committee (Summer 2012~ Spring 2013)
<u>College Committee</u>	
2012 ~ 2013	Member , Graduate and Research Affairs Committee at Parks College (2012~ Spring 2013)
<u>University Committee</u>	
2012 ~ 2013	Committee Member of Honors Program Faculty Advisory Council at SLU (2012 ~ Spring 2013)

4.3 **Professional Review Services**

1. **Associate Editor**, [Transportation Research Record \(TRR\) Editorial Board](#) (Jan. 2020 ~ Present)
2. **Guest Editor**, *Special Issue on “Infrastructure-Enabled/Empowered Intelligent Transportation Systems”* [Intelligent Transportation Infrastructure](#). 2022.
3. **Member**, Editorial Advisory Board, *Transportation Research Part C: Emerging Technologies: An International Journal* (2016 ~ Present)
4. **Member**, Editorial Advisory Board, *Journal of Intelligent Transportation Systems* (2018~Present)
5. **Paper Review Coordinator** (2017 - 2020)⁵⁶. TRB ABJ35⁵⁷ Highway Traffic Monitoring Committee.

⁵⁶ Co-coordinator in 2017, 2018

⁵⁷ ABJ35 has been renamed as ACP70