ANDALIB SHAMS

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EDUCATION

Ph.D. in Civil Engineering (On-going) Expected: Spring 2023
Iowa State University, Ames, Iowa
Relevant Courses: Traffic Signal Control, Computational Optimization, Deep Learning, Multi-variate Analysis

M.S. in Civil Engineering August 2018
University of Wyoming
Relevant Courses: Traffic operations, Traffic Simulation, Regression Analysis, Traffic Safety

Bachelor of Urban and Regional Planning September 2015
Bangladesh University of Engineering and Technology, (BUET)

TECHNICAL SKILLS

Programming Skills	Python, C++
Simulation Software	PTV VISSIM, PTV VISTRO, synchro, PTV VISUM
Data Analysis/ Statistics Tools	Python library (NumPy, Panda, Matplotlib), R, SQL
Optimization Tool	IBM CPLEX

EXPERIENCE

Graduate Research Assistant at Iowa State University January 2019-Present

- Developed vehicle trajectory-based adaptive traffic signal controller framework using Component Object Model (COM) and Application Programming Interface (API)
- Developed a COM framework to evaluate operational benefits of Advanced Infrastructure Sensing (AIS) on adaptive signal control. (Sponsored by National Renewable Energy Lab (NREL))
- Working on preparing a taxonomy for adaptive traffic signal control **[manuscript under preparation]**
- Working on evaluating the performance benefits of arrival profile-based offset over bandwidth-based traffic signal offset optimization **[manuscript under preparation]**

Graduate Research Assistant at University of Wyoming January 2017- August 2018

- Evaluated operational performances of innovative intersections and transit priority in Redwood Road Corridor at Salt Lake City, Utah. (This project was sponsored by Avenue Consultant)
- Implemented driver behavior model for Connected and Automated Vehicles and evaluated the operational benefits

Briefly worked as **Short-Term Consultant at The World Bank Group** (December 2015 - June 2016) and as **Intern at Dhaka Transport Corporation Authority (DTCA)** (January 2015 - February 2015)

RELEVANT PUBLICATIONS

Shams, A., and Day, C.M. Advanced Gap Seeking Logic for Actuated Signal Control using Vehicle Trajectory Data: Proof of Concept *Proceedings of the 101st Transportation Research Board Annual Meeting* 2022. **[Accepted in TRB AM presentation, under review for Transportation Research Record.]**

Shams, A., and Day, C.M. (2021) Impact of Sensing Range on Real-Time Adaptive Control of Signalized Intersections Using Vehicle Trajectory Information *Proceedings of the 100th Transportation Research Board Annual Meeting* 2021.

Shams, A., Zlatkovic, M., (2020). Effects of Capacity and Transit Improvements on Traffic and Transit Operations *Transportation Planning and Technology*, 43:6, 602-619, DOI: 10.1080/03081060.2020.1780710 **[Journal]**

Shams, A., Zlatkovic, M., (2019). Platoon Signal Priority in Connected-Autonomous Vehicle Environments: Algorithm Development and Testing *Put I Saobraćaj*, *65*(4), 1-9. https://doi.org/10.31075/PIS.65.04.01 **[Journal]**