Shakib Mustavee

PhD Candidate · Deapartment of Civil Engineering

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Education

University of Central Florida — *Orlando, Florida*

Ph.D. in Civil Engineering - *Transportation Track* — *August 2019 - present*

- Advisor: Dr. Shaurya Agarwal

University of Central Florida — *Orlando, Florida*

M.S. in Civil Engineering - *Smart Cities Track* — *August 2019 - December 2021*

- Advisor: Dr. Shaurya Agarwal

Bangladesh University of Engineering & Technology — *Dhaka, Bangladesh*

B.S. in Electrical & Electronics Engineering — *February 2013 - September 2017*

- Undergraduate research advisor: Dr. Mohammad Faisal

Professional Experience

2020-2024 **Graduate Research Assistant**, Dept. of Civil Engineering, University of Central Florida

2021-2023 **Graduate Teaching Assistant**, Dept. of Civil Engineering, University of Central Florida

Publications

Published Journal

S. Das, **S. Mustavee**, S. Agarwal and S. Hasan, "Koopman-Theoretic Modeling of Quasiperiodically Driven Systems: Example of Signalized Traffic Corridor," in IEEE Transactions on Systems, Man, and Cybernetics: Systems, vol. 53, no. 7, pp. 4466-4476, July 2023, doi: 10.1109/TSMC.2023.3253077.

K. R. Shabab, **S. Mustavee**, Agarwal, S., Zaki, M. H., & Das, S. K. (2023). Dynamic mode decomposition type algorithms for modeling and predicting queue lengths at signalized intersections with short lookback. Journal of Intelligent Transportation Systems, 1-15.

Mustavee, S., Agarwal, S., Enyioha, C. et al. A linear dynamical perspective on epidemiology: interplay between early COVID-19 outbreak and human mobility. Nonlinear Dyn 109, 1233–1252 (2022). https://doi.org/10.1007/s11071-022-07469-5

Conference Proceedings

S. Mustavee, A. M. S. -E. Huq, F. M. Mohammedy and S. Ahmed, "An Alternative Approach to Voltage Dependent Reduction of Schottky Barrier Height Modeling in Two Dimensional MSM Photodetectors," TENCON 2019 - 2019 IEEE Region 10 Conference (TENCON), Kochi, India, 2019, pp. 1829-1833, doi: 10.1109/TENCON.2019.8929654..

Book Chapters

Shaurya Agarwal, **Shakib Mustavee**, Juan Contreras-Castillo, and Juan Guerrero-Ibañez. "Sensing and monitoring of smart transportation systems." In The Rise of Smart Cities, pp. 495-522. Butterworth-Heinemann, 2022.

Under Review

Shakib Mustavee, Suddhasattwa Das, and Shaurya Agarwal. Data-driven discovery of quasiperiodically driven dynamics. arXiv preprint arXiv:2301.09191 (2023).

Shakib Mustavee Shaurya Agarwal, Arvind Singh. Quantifying Adaptivity in a Networked Dynamical Systems: A Case Study of Signalized Intersection Corridor

Awards, Fellowships, & Grants

2019 - 2020	**ORC Doctoral Fellowship**, College of Engineering, University of Central Florida	*$ 25,000*
2024	**Graduate Presentation Fellowship**, Graduate Studies, University of Central Florida	
2021	**Conference Travel Fellowship**, Student Government Association, University of Central Florida	

Presentations

** presenting author*

Invited Talk

May 2023 – *Modeling Traffic Systems Using Data-Driven Dynamical Systems Perspective*.
Workshop: ACC 2023, Workshop on Recent Developments in Data-Driven Methods for Dynamical Systems and Control
San Diego, California.

Poster Session

Florida Autonomous Vehicle Summit, 2019,
Developing A Fault-tolerant Heterogeneous Sensor Fusion Methodology for Applications in Autonomous Mobility,
Miami, Florida.

Florida Autonomous Vehicle Summit, 2021,
Smart Arterial Management: Stable and Long-term Prediction of Intersection Queue lengths,
Orlando, Florida.

Transportation Research Board 100th Annual Meeting, 2021,
Poster: *Exploring Dynamic Mode Decomposition for Robust System Identification: Applications to Adaptive Signalized Intersections*
Kazi Redwan Shabab*, **Shakib Mustavee***, Shaurya Agarwal, Mohamed Hussein Zaki
Washington DC.

Florida Autonomous Vehicle Summit, 2023,
Quantifying Adaptiveness in Signalized Intersections: A Novel Fractal Analysis Approach,
Tampa, Florida.

Teaching Experience

Spring *2021*	**TTE4300 – Transportation Analytics**, Graduate Teaching Assistant
Fall *2021*	**CGN3405 – Applied Numerical Methods for Civil Engineering** , Graduate Teaching Assistant
Spring *2022*	**CGN3405 – Applied Numerical Methods for Civil Engineering** , Graduate Teaching Assistant
Fall *2022*	**EGN3310 – Engineering Analysis: Statics**, Graduate Teaching Assistant
Spring *2023*	**TTE4300 – Transportation Analytics**, Graduate Teaching Assistant
Spring *2023*	**TTE4274 – Transportation Engineering Systems**, Graduate Teaching Assistant

Outreach & Professional Development

Peer Reviewer

IEEE International Conference on Intelligent Transportation Systems
Nonlinear Dynamics