

UTC Project Information	
Project Title	Macroscopic Fundamental Diagram Estimation using Loop-Detector Data (Project I6)
University	Georgia Institute of Technology
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Funding Source(s) and Amounts Provided (by each agency or organization)	STRIDE: \$101,368
Total Project Cost	\$101,368
Agency ID or Contract Number	69A3551747104
Start and End Dates	February 15, 2022 to May 01, 2023
Brief Description of Research Project	<p>This project aims to examine the empirical estimation approach of the Macroscopic Fundamental Diagram (MFD) using loop detector data. The MFD give the network-wide relationship between average traffic variables and has become an invaluable tool for congestion management on large transportation networks. However, deriving the MFD using the empirical data is challenging since (i) the required loop detector data is not available in most of the cities, (ii) in the networks with available loop detector data, the loop detectors cover only a fraction of streets in the network, and (iii) the data coming from various loop detectors is prone to bias and inaccuracy, which makes the data cleaning and processing cumbersome. This project will rely on the recently published loop detector data from more than 40 cities over the globe and simulation experiments to investigate three main impacting factors on the network MFD: (i) the distribution of the loop detectors over the network, (ii) the distribution of loop detectors on the links, and (iii) the extent of the coverage area of the loop detectors and its relationship with the accuracy of the resulting MFD. As a result of this project, we aim to develop a robust method to accurately estimate the network MFDs considering the aforementioned impacting factors.</p>
Describe Implementation of Research Outcomes (or why not implemented)	Not available yet.
Place Any Photos Here	

Impacts/Benefits of Implementation (actual, not anticipated)	Not available yet.
Web Links <ul style="list-style-type: none"><li>• Reports</li><li>• Project website</li></ul>	<a href="https://stride.ce.ufl.edu/project-i6/">https://stride.ce.ufl.edu/project-i6/</a>