



UTC Project Information – Cooperative Mobility for Competitive Megaregions (CM²)

Project Title	Scooter-Share Travel Demand Forecast: A Context-Aware Lstm Recurrent Neural Network Approach
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Funding Source(s) and Amounts Provided (by each agency or organization)	U.S. Department of Transportation
Total Project Cost	\$68,300
Agency ID or Contract Number	US DOT Grant Number: 69A3551747135
Start and End Dates	9/1/2020 – 9/30/2021
Brief Description of Research Project	Shared micromobility, including dockless bike-share and scooter-share, has been popular in many cities in the U.S. Due to its small vehicle size and flexible on-demand riding style, it is considered a viable low-carbon transportation alternative to satisfy people’s short-travel demand. Research has shown that shared micromobility trips mostly cluster in downtown areas where there are recreational facilities and shopping stores and on university campuses where students live and study. In addition, researchers have pointed out the possibility of a tight connection between shared micromobility travel demand and economic activities. Following this idea, this study builds a context-aware longshort term memory (CALSTM) recurrent neural network to forecast the daily travel demand for scooter-share in Austin, Texas. The result of this study could serve as valuable guidance for transportation planning projects aiming at promoting shared micromobility in cities by predicting high-demand areas based on local economic activity patterns.
Describe Implementation of Research Outcomes (or why not implemented)	Project has generated three peer reviewed paper and one ACSP conference presentation.
Impacts/Benefits of Implementation (actual, not anticipated)	The research findings have been shared with Austin Transportation Department and used to guide future E-scooter regulation and policy.
Web Links (to reports, project website, etc.)	N/A