LITERATURE SURVEY

A New Hint To Transportation-Analysis Of The NYC Bike Share System

Presented by:

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S.No	TITLE	AUTHOR(S)	TECHNIQUE	YEAR	FINDINGS/PROS/CONS
1.	Bike Sharing Demand Prediction based on Knowledge Sharing across Modes	Yuebing Liang, Guan Huang, Zhan Zhao	A Graph-based Deep Learning Approach	2022	this study proposes a graph-based deep learning approach for bike sharing demand prediction (B-MRGNN) with multimodal historical data as input. The spatial dependencies across modes are encoded with multiple intra- and inter-modal graphs. A multi-relational graph neural network (MRGNN) is introduced to capture correlations between spatial units across modes, such as bike sharing stations, subway stations, or ride-hailing zones.
2.	Multi-source Data Analysis for Bike Sharing Systems	Nguyen Thi Hoai Thu Le Trung Thanh Chu Thi Phuong Dung Nguyen Linh-Trung	Regression models using multi-source data	2017	Two types of regression models using multi-source data to predict the hourly bike pickup demand at cluster level: Similarity Weighted K-Nearest-Neighbor (SWK) based regression and Artificial Neural Network (ANN). SWK-based regression models learn the weights of several meteorological factors and/or taxi usage and use the correlation between consecutive time slots to predict the bike pickup demand. The ANN is trained by using historical trip records of BSS, meteorological data, and taxi trip records. Our proposed methods are tested with real data from a New York City BSS: Citi Bike NYC. Performance comparison between SWK-based and ANN-based methods is provided. Experimental results indicate the high accuracy of ANN-based prediction for bike pickup demand using multi-source data.

3.	An Analysis of a Bike-Sharing System from a Business Model Perspective	Suzana Regina Moro Paulo Augusto Cauchick-Migue	Business Model	2022	Data was collected based on interviews with the executives of a focal company and information retrieved from other sources, e.g., company internal reports, PSS design documents, etc.). A research protocol was developed based on the literature to identify a set of variables to be interpreted. A semi-structured questionnaire was developed for interviews, which was recorded for later content transcription and analysis.
4.	Estimating Bike Availability from NYC Bike Share Data	Clif Kranish	Using Pandas to restructure trip records from Citi Bike to estimate the number of bikes available at a station throughout the day	2021	The number of bikes in the station at the beginning of the month is unknown. It doesn't take into account rebalancing, bikes removed for maintenance or those added to the system.
5.	If We Build It, Who Will Come? Comparing Sociodemographic Characteristics of Bike Share Subscribers, Cyclists, and Residents of New York City	Aldo Crossa Kathleen H. Reilly Shu Meir Wang Sungwoo Lim Philip Noyes	compared the sociodemographic characteristics Using NYC Community Health Survey data	2021	Approximately 2.2 million residents lived in 15 NYC neighbourhoods with ≥1 Citi Bike station, and 449,000 (20.5%) reported cycling at least once a month in the past 12 months. Among first-time Citi Bike subscribers, 23,223 (11.5%) completed the survey. Compared with NYC cyclists, Citi Bike subscribers were more likely to be women, aged 24 to 45, White, college graduates, and from a household with an income >400% than the poverty level. Compared with the general population, cyclists were more likely to be White, male, and from a household with an income >400% than the poverty level. Race/ethnicity and socioeconomic status (not gender) disparities were larger among Citi Bike subscribers than NYC cyclists. With the emergence of cycling as an alternative transportation during the COVID-19 pandemic and the extension of bike share programs.