

Traffic Flow Prediction Dataset

Introduction

The goal for this dataset is to forecast the spatio-temporal traffic volume based on the historical traffic volume and other features in neighboring locations. Specifically, the traffic volume is measured every 15 minutes at 36 sensor locations along two major highways in Northern Virginia/Washington D.C. capital region. The 47 features include: 1) the historical sequence of traffic volume sensed during the 10 most recent sample points (10 features), 2) week day (7 features), 3) hour of day (24 features), 4) road direction (4 features), 5) number of lanes (1 feature), and 6) name of the road (1 feature). The goal is to predict the traffic volume 15 minutes into the future for all sensor locations. With a given road network, we know the spatial connectivity between sensor locations.

Processed Data

Download link: [\[Dataset\]](#)

Data format: *.mat (use Matlab to open)

Data description:

Variable Name	Type	Size	Description
tra_X_te	array of matrices	1*840	test set input data: traffic indices for 840 contiguous quarter-hours each element is a 36*48 matrix: 36 spatial locations by 48 features
tra_X_tr	array of matrices	1*1261	training set input data: traffic indices for 1261 contiguous quarter-hours each element is a 36*48 matrix: 36 spatial locations by 48 features
tra_Y_te	array of matrices	36*840	<ul style="list-style-type: none">test set output data: traffic flow for 36 locations in 840 contiguous quarter-hours from 2017-01-02 00:00
tra_Y_tr	array of matrices	36*1261	<ul style="list-style-type: none">training set output data: traffic flow for 36 locations in 1261 contiguous quarter-hours until 2017-02-01 00:15
tra_adj_mat	squared matrix	36*36	adjacency matrix denoting the spatial connectivity of traffic network among 36 locations

Citation

To use these datasets, please cite the papers:

Liang Zhao, Olga Gkountouna, and Dieter Pfoser. 2019. Spatial Auto-regressive Dependency Interpretable Learning Based on Spatial Topological Constraints. *ACM Trans. Spatial Algorithms Syst.* 5, 3, Article 19 (August 2019), 28 pages. DOI:<https://doi.org/10.1145/3339823>

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