# NCST Report - Dynamic Ride-Sharing with HOV Lanes and Meeting Points Dataset

**Dataset available at:** https://doi.org/10.7910/DVN/P6ROMD

(This dataset supports report **Dynamic Routing for Ride-Sharing,** https://doi.org/10.7922/G2D798QK)

This U.S. Department of Transportation-funded dataset is preserved in the Harvard Dataverse Repository (https://dataverse.harvard.edu/), and is available at https://doi.org/10.7910/DVN/P6ROMD

The related final report **Dynamic Routing for Ride-Sharing**, is available from the National Transportation Library's Digital Repository at https://rosap.ntl.bts.gov/view/dot/60189

**Metadata from the Harvard Dataverse Repository record:**

Description:

In this research report, we explored the use of HOV lanes and meeting points in a ride-sharing system where drivers have their own origin and destination. We proposed a two-stage heuristic algorithm that consists of an insertion heuristic to solve the PDP problem and a second-stage algorithm that can solve the meeting points problem optimally in polynomial time. Our experimental results show that the HOV lanes and meeting points can increase the efficiency of the dynamic ride-sharing system.

- Method used: Randomly generated on a computer. For details, check the experimental section in the report.
- Hardware info: CPU - AMD RYZEN 9 3900X RAM - 16GB
- Software info: Language - Python, randomization using the Numpy module with a seed of 1000

Subject:

Engineering

Notes:

It is randomly generated within grids where each unit of the grid represents a 1-mile by 1-mile square. It is used to generate the origins and destinations of passengers. Then this location information along with other parameters are used as inputs to test the solution algorithm proposed in the report. Therefore, instead of the data sets, the codes used to generate them are stored.

**Recommended citation:**

Hu, Shichun, 2021, "NCST Report - Dynamic Ride-Sharing with HOV Lanes and Meeting Points", https://doi.org/10.7910/DVN/P6ROMD, Harvard Dataverse, V1

**Dataset description:**

This dataset contains 1 file described below.

**generate.py:**
The .py file extension is commonly used for files containing source code written in Python programming language (for more information on .py files and software, please visit https://www.file-extensions.org/py-file-extension).

**National Transportation Library (NTL) Curation Note:**
As this dataset is preserved in a repository outside U.S. DOT control, as allowed by the U.S. DOT's Public Access Plan (https://ntl.bts.gov/public-access) Section 7.4.2 Data, the NTL staff has performed ***NO*** additional curation actions on this dataset. NTL staff last accessed this dataset at https://doi.org/10.7910/DVN/P6ROMD on 2022-02-04. If, in the future, you have trouble accessing this dataset at the host repository, please email NTLDataCurator@dot.gov describing your problem. NTL staff will do its best to assist you at that time.