



## DATA SCIENCE

Verkehrssystemplanung und Verkehrstelematik  
Institut für Land- und Seeverkehr (ILS)  
Technische Universität Berlin

## Final assignment

This assignment is centered around using dashboards to communicate data analyses, with a special focus on geospatial data.

- By default you will be working with the same group as for the mid-term assignment. In the event that you cannot work with the same group, let us know as early as possible.
- Your group will have 10 minutes to present the dashboard. After each presentation, there will be a few minutes during which we will ask questions about your presentation.
- Remember: As this is a **pass/fail** class, your presentation will not be graded. But in order to obtain a **pass** at the end of the semester, you must present.

## Timeline

Please note: These are hard(!) deadlines. We will not accept late submissions!

- **FRIDAY - 31. Jan 2025** Dashboard and code due via email to Jakob (rehmann@vsp.tu-berlin.de), Sydney (paltra@vsp.tu-berlin.de), and Billy (charlton@vsp.tu-berlin.de)
- **MONDAY - 3. Feb 2025** Presentations

If you cannot present on the 3. Feb 2025, let us know immediately.

## Requirements to pass

The final assignment has two foci: 1) wrangling and preparing spatial data in the form of maps; 2) present work on a dashboard (SimWrapper or Quarto). As a primary datasource you will use MATSim outputs; our suggestion is the carfree Berlin scenario we've been working with throughout the semester<sup>1</sup>. We want you to come up with interesting research questions and find expressive ways to present your analyses. A comparison of the base and policy case could be fruitful.

The following components are required:

- Create a visually appealing dashboard to present findings using SimWrapper or Quarto. The dashboard should tell a story, and should be meaningfully organized over multiple tabs/pages.
- Dashboard will have a focus on geospatial data. Data-sources must include both MATSim outputs as well as external data sources<sup>2</sup>.
- Dashboards must also include at least one of each of the following forms of non-spatial data representation: a table, a plot, and a text box.
- In the process of preparing/wrangling the geospatial data for the dashboard, the following operations must be utilized: geospatial join and filtering.

<sup>1</sup>MATSim Berlin - Base Case: [https://svn.vsp.tu-berlin.de/repos/public-svn/matsim/tutorial/datascience2024/matsim\\_outputs/output-1pct/base/](https://svn.vsp.tu-berlin.de/repos/public-svn/matsim/tutorial/datascience2024/matsim_outputs/output-1pct/base/) ; MATSim Berlin - Carfree Scenario: [https://svn.vsp.tu-berlin.de/repos/public-svn/matsim/tutorial/datascience2024/matsim\\_outputs/output-1pct/policy/](https://svn.vsp.tu-berlin.de/repos/public-svn/matsim/tutorial/datascience2024/matsim_outputs/output-1pct/policy/)

<sup>2</sup>This could be in the form of population-demographics (<https://www.destatis.de/>), land-use (e.g. from OSM), environmental data such as emissions, etc. Feel free to incorporate raster data as well. Since we haven't learned to use it in this course, we encourage you to review our textbook, <https://geocompr.robinlovelace.net/>