

August, 2019

## **Topics for Master Thesis / Bachelor Thesis / Homework Assignments – ST/WT 2019**

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Own ideas for topics are appreciated, they should be orientated on this list of topics. A specification of the topic will follow individually. All papers can be written in English or German. I am interested in qualitative (Grounded Theory) and quantitative (Structural Equation Modeling) data collection and evaluation. Programming skills are optional, but highly recommended for most topics, (recommendations in brackets).

All requirements e.g., page limits, fonts etc. will be answered here: <https://www.iwi.uni-hannover.de/hinweiseabschlussarbeiten0.html>

### **Sustainable mobility:**

- Clustering and prediction of free floating mobility services to enable the optimization of operation and maintenance (E.g. Python, QGIS, ArcGIS, GAMS)
- Geodata acquisition and processing of publicly accessible sources using data mining methods. (E.g. Python, QGIS, ArcGIS)
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### **Renewable energy:**

- Potential analysis for photovoltaics, using freely accessible cityGML or OSM data using the example of the city of Hannover. (E.g. QGIS, ArcGIS, Python)
- Layout optimization problem of onshore wind farms. A case study in the Region of Hanover. (E.g. QGIS, ArcGIS, GAMS, Python)

### **Data science:**

- Principles of Big Data processing and storage: valuing different database management systems. (Basic knowledge of databases (In-Memory DBs, SQL-, NoSQL DBs, NewSQL DBs, Cloud storage, etc.) recommended but not absolutely necessary)
- Preparation and visualization of unstructured data. (E.g. Python, R)