



## Kolloquium zur Masterarbeit

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### Solving Vehicle Routing Problems using Graph Databases

Graph databases are getting more popular in recent years as they provide an intuitive and efficient way of storing and querying highly interconnected data. Structural type queries perform better on graph databases than on relational databases, making them good candidates for many data-intensive fields of application. However, data modeling is not researched as thoroughly for graph databases, commonly leading to an intuitive way of modeling, where the performance of used queries is not looked at in detail.

In this work an intuitive graph model for the Dynamic Taxi Ridesharing Problem (DTRP) as an example for data-intensive Vehicle Routing Problems is developed by looking at important tasks, that are necessary to solve the problem. This data model is then transformed into a filter-based graph model by introducing a new graph modeling rule. Graph-specific algorithms are implemented to solve the DTRP on a generated real-world instance and to compare the performance on both data models. Finally, the clear superiority of the filter-based over the intuitive graph model and therefore the effectiveness of the graph modeling rule is shown.

Dienstag, 11. Dezember 2018, 14:00 Uhr,  
Besprechungsraum 106, IfI (D3), Julius-Albert-Str. 4.