

A cordial invitation to the opening talk of the
Brown Bag Seminar
Recent Developments in Data Science:

Demand Management in Shared Mobility Systems

By
Dr. Matthias Soppert

Date: 04.05.2023 (Thursday) at 12:00

Location: R 301 WIWI

Link and further information: Course 39740 Seminar: Doctoral Seminar "Recent Developments in Data Science" in Stud.IP

Abstract:

Shared mobility systems like car sharing and bike sharing have become an attractive and wide-spread type of urban mobility over the past decades. The biggest challenge regarding the profitable operation of such systems is the occurring dynamic imbalance between supply and demand, which stems from fluctuating demand patterns and spatially unbalanced vehicle movements. To counter these imbalances, the scientific literature traditionally focused on the supply-sided control approach by means of active vehicle relocation. In my talk, I present approaches in which demand management is proposed as a cost-efficient alternative, meaning that the system's demand side is influenced through pricing and availability control. On the one hand, specific practice-relevant problems are addressed and solved. On the other hand, general modeling and solution approaches are developed, which can be transferred to related optimization problems for tactical and operational control of shared mobility systems. Extensive numerical studies, including case studies of Europe's largest car sharing company Share Now, demonstrate that demand management can be implemented successfully in shared mobility systems.

Speaker:

Dr. Matthias Soppert

Dr. Matthias Soppert is postdoc researcher at the Chair of Business Analytics & Management Science of the University of the Bundeswehr in Munich. In his dissertation on "Demand Management in Shared Mobility Systems", he developed pricing and availability control approaches, with a focus on their application to free-floating car sharing. The specific problems addressed are characterized by their strong practical relevance, as they are based on close cooperation with Europe's largest car sharing provider, Share Now. Methodologically, his work combines integer programming and learning-based techniques. For his dissertation, he was awarded with the 2022 INFORMS TSL best dissertation award.