

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

Insights into Patient Scheduling, Disaster Management, and Sustainable Supply Chains

by

Prof. Dr. Usha Mohan, IIT Madras, India

Date: 18. July 2024 (Thursday) at 12:00

Location: R 026 WIWI

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

Abstract:

In this talk, I provide an overview of the research I am currently pursuing. In particular, I focus the work done across three domains-patient scheduling, disaster management, and sustainable supply chains. In patient scheduling, we focus on scheduling in a preventive health check-up facility constrained by resources. We propose MILP and MDP formulations to capture the system dynamics and propose heuristics to solve the same. In disaster management, we consider vulnerability in shelter location-allocation models by using two vulnerability metrics: location vulnerability and network vulnerability. We address the strategic and operational decisions for disaster management's phases by integrating the two vulnerability metrics. We propose MILP models and propose a Linear Relaxation Heuristic to solve the models. Finally, we address the sustainability issues in supply chains. Here we address the role of transparency in supply chains to be socially sustainable (and responsible) and discuss areas for further research.

Speaker:

Usha Mohan is Professor of Quantitative Methods and Supply Chain Management at the Indian Institute of Technology Madras. Her research interests focus on building quantitative models in Operations management, with particular interests in healthcare, sustainable supply chains, and disaster management. She also is interested in working on combinatorial optimization problems, in particular the traveling salesman problem and the vehicle routing problems. Her research is mostly motivated by the challenges faced by the Indian industry that can be generalized to a larger domain. Her teaching interests include data analytics, optimization, and supply chain analytics.

Prof. Dr. Usha Mohan