

# Routing in Traffic and Logistics

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**Abstract:** Traffic management and routing in logistics are optimization tasks of great practical relevance. One wants to use the existing road network or run a logistic system in such a way that the load of the network is minimized or the throughput is maximized. This lecture deals with these optimization problems from the viewpoint of network flow theory, and reports about three applications in practice: route guidance of rush hour traffic (a project with DaimlerChrysler AG, Berlin), container transport in container terminals (projects with HHLA AG, Hamburg, and Patrick Corporation at Port Botany, Melbourne), and periodic timetabling in public transportation networks (projects with Berlin Subway and Deutsche Bahn). The underlying mathematics to solve these applications exploit a combination of network algorithms, convex separable optimization, mixed integer linear programming, and combinatorial graph theory.

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