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Nota di contenuto	Chapter 1. Trajectory data map-matching -- Chapter 2. Trajectory data compression -- Chapter 3. Trajectory data protection -- Chapter 4. TripPlanner: Personalized trip planning leveraging heterogeneous trajectory data -- Chapter 5. ScenicPlanner: Recommending the most beautiful driving routes -- Chapter 6. GreenPlanner: Planning fuel-efficient driving routes -- Chapter 7.Hunting or waiting: Earning more by understanding taxi service strategies -- Chapter 8. iBOAT: Real-time detection of anomalous taxi trajectories from GPS traces -- Chapter 9. Real-Time imputing trip purpose leveraging heterogeneous trajectory data -- Chapter 10. GPS environment friendliness estimation with trajectory data -- Chapter 11. B-Planner: Planning night bus routes using taxi trajectory data -- Chapter 12. VizTripPurpose: Understanding city-wide passengers' travel behaviours -- Chapter 13. CrowdDeliver: Arriving as soon as possible -- Chapter 14. CrowdExpress: Arriving by the user-specified deadline -- Chapter 15. Open Issues -- Chapter 16. Conclusions.

Sommario/riassunto

With the proliferation of GPS devices in daily life, trajectory data that records where and when people move is now readily available on a large scale. As one of the most typical representatives, it has now become widely recognized that taxi trajectory data provides rich opportunities to enable promising smart urban services. Yet, a considerable gap still exists between the raw data available, and the extraction of actionable intelligence. This gap poses fundamental challenges on how we can achieve such intelligence. These challenges include inaccuracy issues, large data volumes to process, and sparse GPS data, to name but a few. Moreover, the movements of taxis and the leaving trajectory data are the result of a complex interplay between several parties, including drivers, passengers, travellers, urban planners, etc. In this book, we present our latest findings on mining taxi GPS trajectory data to enable a number of smart urban services, and to bring us one step closer to the vision of smart mobility. Firstly, we focus on some fundamental issues in trajectory data mining and analytics, including data map-matching, data compression, and data protection. Secondly, driven by the real needs and the most common concerns of each party involved, we formulate each problem mathematically and propose novel data mining or machine learning methods to solve it. Extensive evaluations with real-world datasets are also provided, to demonstrate the effectiveness and efficiency of using trajectory data. Unlike other books, which deal with people and goods transportation separately, this book also extends smart urban services to goods transportation by introducing the idea of crowdshipping, i.e., recruiting taxis to make package deliveries on the basis of real-time information. Since people and goods are two essential components of smart cities, we feel this extension is bot logical and essential. Lastly, we discuss the most important scientific problems and open issues in mining GPS trajectory data.