1. Record Nr. UNINA9910999676003321

Autore	Shi Quan
Titolo	Connected Vehicles Traffic Prediction : Emerging GNN Methods / / by Quan Shi, Yinxin Bao, Qinqin Shen, Zhenquan Shi, Ruifeng Gao
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2025
ISBN	3-031-84548-X
Edizione	[1st ed. 2025.]
Descrizione fisica	1 online resource (IX, 180 p. 108 illus., 90 illus. in color.)
Collana	Wireless Networks, , 2366-1445
Disciplina	621.382
Soggetti	Telecommunication Computational intelligence Transportation engineering Traffic engineering Communications Engineering, Networks Computational Intelligence Transportation Technology and Traffic Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Artificial Intelligence in Connected Vehicles -- A Hybrid Model Integrating Local and Global Spatial Correlation for Connected Vehicles Traffic Prediction -- Sdscnn: A Hybrid Model Integrating Static and Dynamic Spatial Correlation Neural Network For Connected Vehicles Traffic Prediction -- Spatial-Temporal Complex Graph Convolution Network for Connected Vehicles Traffic Prediction -- Prior Knowledge Enhanced Time-Varying Graph Convolution Network for Connected Vehicles Traffic Prediction -- Spatial-Temporal Heterogeneous and Synchronous Graph Convolution Network For Connected Vehicles Traffic Prediction -- Multi-Sequential Temporal Convolution Gated Graph Neural Network For Connected Vehicles Traffic Prediction -- Connected Vehicles Traffic Prediction Based On Multi-Temporal Graph Convolutional Networks -- Urban Road Network Connected Vehicles Traffic Speed Prediction Model Based On Global Spatio-Temporal Characteristics -- Future Challenges Of Connected Vehicles Traffic Prediction -- Conclusion.
Sommario/riassunto	This book delves into the problems and challenges faced in achieving

improved performance in connected vehicles traffic flow prediction in intelligent connected transportation systems and provides an in-depth analysis of spatial-temporal feature extraction, global local spatial feature extraction, and fusion of external factors. The book is divided into ten chapters, and the introductory section presents the history of the development of artificial intelligence and graph neural networks in the context of connected vehicles, related work on prediction of connected traffic, and preliminary knowledge. Chapter 2 to 9 present eight prediction methods in the context of connected traffic, respectively. Each section includes an introduction to the problem definition, model architecture, experimental setup, and discussion of results, as well as references. The last section summarizes the contributions of the book and future challenges. Covers performance in connected vehicles traffic flow prediction in intelligent connected transportation systems; Presents connected traffic flow prediction solutions that ensure model performance; Proposes solutions demonstrated with proof-of-concept prototype implementations, written in open-source Python.