

Temporal Aspects in Big Data

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Abstract

Scenario recognition is an important technology in Data Science and Artificial Intelligence. It reveals historical patterns, trends and associations related to human behavior and time by computing and analyzing large-scale data sets. Scenario recognition can be used to solve the problems of prediction, decision-making, diagnosis, process management and supervision, historical reconstruction and so on. However, accurate representing and matching scene patterns in big data is a complex problem. This talk will introduce some basic concepts with respects to time, fluent, state and scenario, and related theories and application examples, as well as a framework for scene pattern representation and matching. The framework can effectively represent relative and absolute time knowledge, and solve the calculation problem of temporal similarity by transforming time similarity into graph similarity. As a special case, we will demonstrate how to apply the framework to represent the traffic light control problem of human intersection in time series and state series.

Bio

Dr Jixin Ma is a Full Professor in the School of Computing and Mathematical Sciences, University of Greenwich, U.K. He is the Director of the Centre for Computer and Computational Science, and the Director of School's PhD/MPhil Programme. He is also a Visiting Professor of Beijing Normal University, Auhui University, Zhengzhou Light Industrial University, and City University of Macau.

Professor Ma obtained his BSc and MSc of Mathematics in 1982 and 1988, respectively, and PhD of Computer Sciences in 1994. His main research areas include Data Science, Artificial Intelligence and Information Systems, with special interests in Temporal Logic, Temporal Databases, Reasoning about Action and Change, Case-Based Reasoning, Pattern Recognition, Graph Matching and Information Security. He has been a member of British Computer Society, American Association of Artificial Intelligence, ICIS/IEEE, and Special Group of Artificial Intelligence of BCS. Professor Ma has been the Editor of several international journals and international conference proceedings, and Program Chair/Invited Keynote Speakers of many international conferences. He has published more than 150 research papers in international journals and conferences.