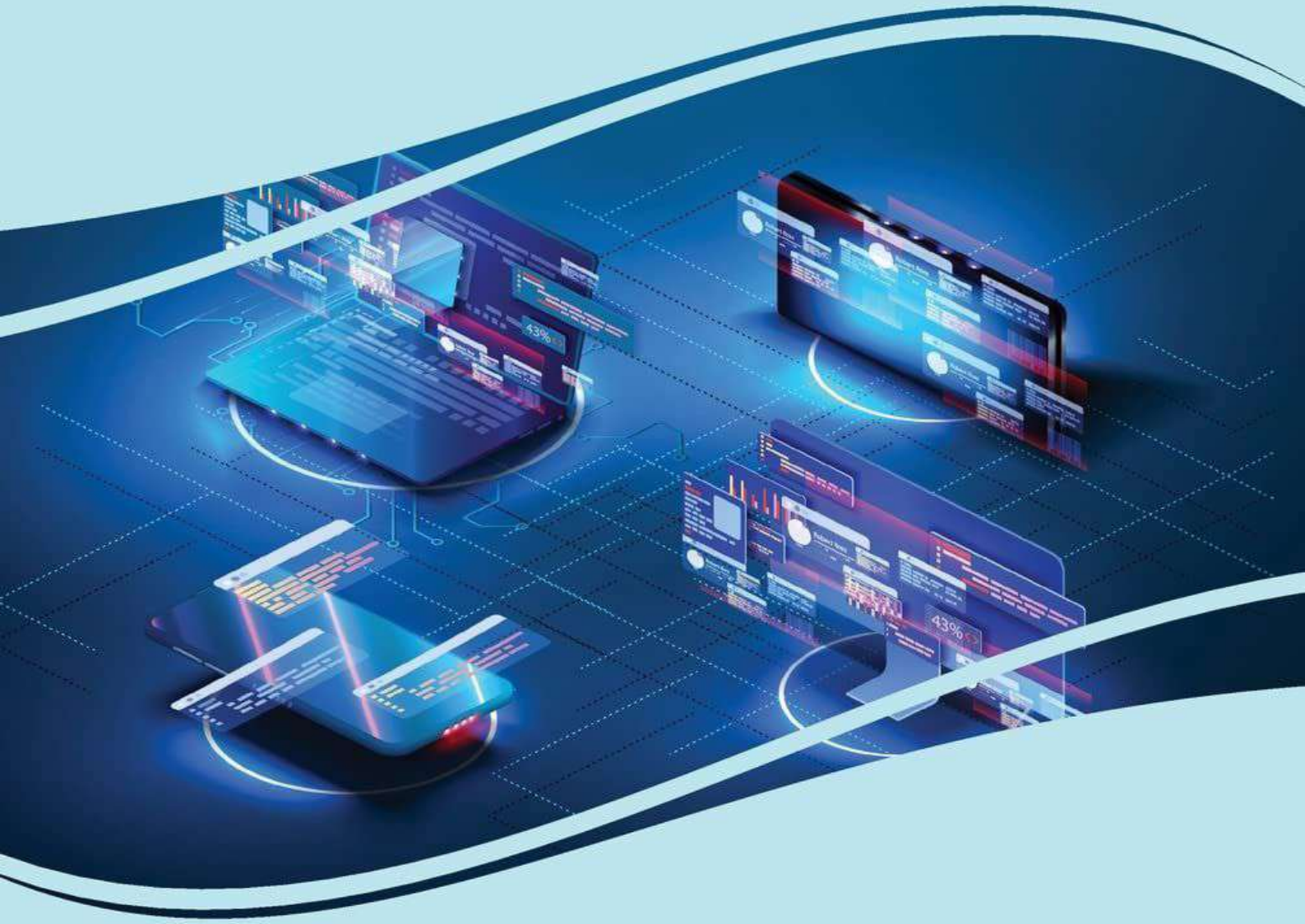


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Designing User Interfaces With a Data Science Approach



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Chapter 10


Social Network Mining, Analysis, and Research Trends: A Case Study

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ABSTRACT

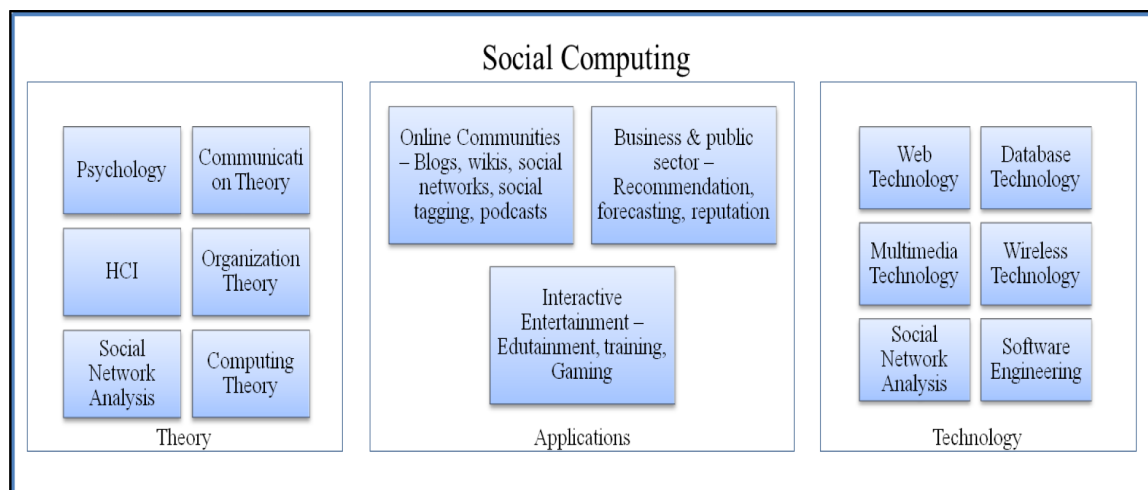
Social media has altered the way we interact with the world around us. Social media usage has taken the world by storm the previous couple of years, and the wide variety of users has grown manifold. The analysis of social networks has been given special attention in recent years, mainly because of the success of online social networks and media sharing sites. In intelligence management, social structures need to be revealed to see social behaviour and social change based on the interactions that have taken place between the social members. Social network mining is very important because of various reasons. For example, studying and analysing social networks allows us to understand social behaviours in different contexts. In addition, by analysing the roles of the people involved in the social network, we can understand how information and opinions spread within the network, and who are the most influential people. This chapter presents a methodical review of social media and mining by applying data mining algorithms to study social networks.

Social Network Mining, Analysis, and Research Trends

INTRODUCTION

People are basically social creatures. Every single day in our life is replete with social interactions; be it family and friends, colleagues, and even routine exchanges made while shopping or travelling (Lee & Chen, 2013). The advent of social computing in the 21st century has now re-created these interactions in the virtual world enabling varieties of endeavours previously unheard of. It has modified the very nature of computation. In recent years, social community studies have been completed using facts collected from on-line interactions and from explicit relationship links in online social network platforms (e.g. facebook, LinkedIn, flickr, on the spot messenger, and so forth.) (Messinger, Stroulia, Lyons, Bone, Niu, Smirnov and Perelgute 2009), (Wang, 2008). The capability to gather this kind of information by using technological manners has implied a full-size shift in social community research, central to the emergence of a “new,” “computational social technological know-how” (Zhang, Y. Jin, W. Jin, Liu, 2015) (Agrahari & Rao, 2017). On one hand, it has had a massive increase in the availability and in how big is social network data, and on one other hand it’s completely redefined the forms of data that may be collected and analysed. This shift in the capability to collect data has additionally broadened all of the disciplines causing the advance of social network research. As per the authors, social network extraction can be used for social engineering (Nasution, 2019). Social network mining and research result are discussed by (Yeung, 2011). (Kim,2006) discussed various do’s and don’ts of using social media for brand monitoring. Massiveness of data and importance of data mining is presented by (Tepper, 2012). (Goldberg & Zhu, 2006) presented graph-based semi-supervised learning algorithm to address the sentiment analysis task of social media data. (Jackson, 2010) has given detailed introduction to social and economic networks. (Liu & Lee, 2009) developed a way to increase recommendation effectiveness by incorporating social network information into collaborative filtering. (Kaschesky, Pawel Sobkowicz & Guillaume Bouchard, 2011) proposed an opinion formation framework based on content analysis of social media and socio-physical system modelling. (Pang and Lee, 2008) proposed technique of using simple statistics in an unsupervised fashion to re-rank search engine results when review-oriented queries are issued. Nanayakkara (2021) mainly focused on datamining techniques to findout trends in social media.

Figure 1. Various spheres of social computing and technologies



Designing User Interfaces With a Data Science Approach

Data science has been playing a vital role in almost all major fields. Many researchers are interested in the development of IT applications, which are user-driven with a focus on issues. This can be addressed using data science. User-driven research and data science have gained much attention from many private, public, and government organizations and research institutions.

Designing User Interfaces With a Data Science Approach promotes the inclusion of more diversified users for user-centered designs of applications across domains and analyzes user data with a data science approach for effective and user-friendly user interface designs. It introduces the foundations of advanced topics of human-computer interaction, particularly with user-centered designs and techniques. Covering topics such as artificial neural networks, natural dialog systems, and machine learning, this book is an essential resource for faculty, research scholars, industry professionals, students of higher education, mathematicians, data scientists, interaction designers, visual designers, software engineers, user experience researchers, accessibility engineers, cognitive system engineers, academicians, and libraries.

Topics Covered

- Artificial Neural Network
- Data Visualization
- Fetal ECG
- Machine Learning
- Natural Dialog Systems
- Performance Measurement
- Social Network Mining
- Software Application Development
- Software Engineering Phases
- Stock Market Technical Analysis
- Stock Screening
- User Interface Design



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