

Lecture Notes in Networks and Systems 183

Mohamed Ben Ahmed ·
İsmail Rakıp Karaş ·
Domingos Santos · Olga Sergeyeva ·
Anouar Abdelhakim Boudhir *Editors*

Innovations in Smart Cities Applications Volume 4

The Proceedings of the 5th International
Conference on Smart City Applications

 Springer

Lecture Notes in Networks and Systems

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Editors

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Editors

Mohamed Ben Ahmed 
Computer Engineering Department
Faculty of Sciences and Techniques
Tangier, Morocco

İsmail Rakıp Karaş
Computer Engineering Department,
Faculty of Engineering
Karabük University
Karabük, Turkey

Domingos Santos
CICS.NOVA - Interdisciplinary Centre
of Social Sciences
Polytechnic Institute of Castelo Branco
Castelo Branco, Portugal

Olga Sergeyeva
Department of Sociology of Culture
and Communication
Saint Petersburg State University
St. Petersburg, Russia

Anouar Abdelhakim Boudhir 
Faculty of Sciences and Techniques
Association Méditerranéenne des Sciences
et Technologies
Tangier, Morocco

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Preface

Nowadays, there is a tremendous trend toward the design and implementation of the smart cities in the world. This trend opens an important and significant research activity by academics and their partners (industrial, governments, civil society,...) in order to establish essential and intelligent foundations for developing the active fields in smart city like economy, industry, healthcare, government, society, water and energy and more.

This edited book edition titled “Innovations in Smart Cities and Applications,” aims to present the scientific researches and engineering applications for building the future smart cities and their different innovative applications and services. The book has also the objective of providing an integrated vision of problems to researcher, engineers, practitioners and outlining the contour of new subjects in smart city applications.

This edition is the fruit of the accepted and presented works in the fourth International virtual Conference on Smart City Applications (SCA2020) held on October 7–9, 2020, in Safranbolu Turkey. It regroups original research, achieved works and proposed architectures on the main topics of the conference. The scope of SCA2020 covers a variety of topics with an intersection with smart cities, including geo-smart information systems, education, healthcare, economy and digital business, building and home automation, environment and agriculture, and information technologies and computer science.

The past, present and certainly future editions of this book edition has the same goals of constructing and building the basics and essentials researches, innovations and applications that can help on the growth of the future next generation of cities and the human well-being. Thanks to participants and researchers who trusted to those series of conferences, that this research area will grow and exist due to their high quality of presented papers.

Our thanks are addressed to all authors for choosing SCA2020 and submitting their manuscripts. We cannot forget, in this occasion, all keynotes speakers for their appreciated and rich scientific talk at the conference session.

We are deeply grateful to all organizing committee members, to all program committee members and reviewers, to all chairs of sessions for their efforts and the time spent in order to evaluate the contributions and to success this event.

We also would like to acknowledge and thank the Springer Nature Switzerland AG staff for their support, guidance and for the edition of this book.

Finally, we wish to express our sincere thanks to Dr. Thomas Ditzinger, Pr. Janusz kacprzyk and Ms. Varsha Prabakaran for their kind support and help to promote and develop research.

Mohamed Ben Ahmed
İsmail Rakıp Karaş
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Keynote Speakers

Smart Cities and Geo-Spatial Technologies



Professor Alias Abdul-Rahman is an Associate Professor at the Department of Geoinformatics, Faculty of Geoinformation Science and Engineering, Universiti Teknologi Malaysia, Skudai, Johor, Malaysia.

He holds a PhD from the University of Glasgow, UK; he has headed up the 3D GIS Research Laboratory since 2000. His research interests include 3D GIS, 3D city modeling and 3D spatial databases.

Smart Cities and Energy



Professor Şule Erten Ela has been the Head of Energy Department since 2016. Since 2019, she has been working as the Solar Energy Director at Ege University. She is currently working as a Professor at Ege University, Institute of Solar Energy, and Department of Energy.

She received Assistant Professor Position in 2005 and Associate Professor Position in 2009 and Full Professor Position in 2015 in Ege University-Solar Energy Institute.

She received Turkish Academy of Sciences-Outstanding Young Scientist Award (TUBA-GEBIP) in 2013. She received UNESCO-LOREAL Young Woman Scientist Award in 2014. In 2015, she received Young Scientist Award from The Science Academy (BAGEP). She has many principles in science such as academic integrity, academic honesty, academic freedom and academic merit.

Deep Learning Applications for Shoreline Extraction from Landsat and Sentinel Satellite Imagery

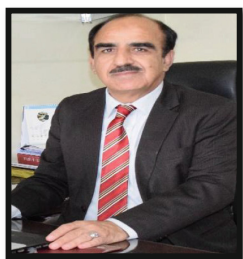


Professor Bulent Bayram is a Professor at Yildiz Technical University, Department of Geomatics Engineering since 2014. He is Head of Photogrammetry Subdivision

His focus interest is on image processing, medical image processing, deep learning, UAV, LIDAR. And he is expert at:

Spatial analysis, remote sensing, deep learning, photogrammetry, programming languages; 3D, images processing, natural disasters, laser scanning, mammography, cardiac CT.

Review Use of Modern Technologies in creating Smart Cities



Prof. Attaullah Shah has 31 year senior/executive level experience of academic leadership, strategic planning, resource mobilization, teaching & research in university and public sector organizations.

He has authored five books in the fields of civil engineering, construction project management, engineering economics, disaster management and high strength concrete. He also authored more than 100 research papers in the renowned peer-reviewed international journals and proceedings of international conferences across the world.

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Smart Citizenship and Sentiment Analysis



Temporal Sentiment Analysis of Socially Important Locations of Social Media Users

Alper Ecemiş¹(✉) , Ahmet Şakir Dokuz¹ , and Mete Celik² 

¹ Department of Computer Engineering, Nigde Omer Halisdemir University,
51240 Niğde, Turkey

{ecemisalper, adokuz}@ohu.edu.tr

² Department of Computer Engineering, Erciyes University, 38039 Kayseri, Turkey
mcelik@erciyes.edu.tr

Abstract. Socially important locations are the places which are frequently visited by social media users. Temporal sentiment analysis of socially important locations is the process of interpretation and classification of emotions within their sharings in their socially important locations over time. Observing the temporal sentiment changes in these locations helps both to examine the emotion change in the locations and to understand the thoughts of the social media users in these locations. In this paper, Twitter is selected as social media data source and temporal sentiment analysis of socially important locations of social media users are analyzed in different time frames. For the analysis, a method, called Temporal Sentiment Analysis of Socially Important Locations (TS-SIL), is proposed in this study. In this method, first of all, socially important locations are discovered from the collected Twitter dataset. Then, sentiment analysis is performed using a dictionary based approach and several machine learning algorithms. Finally, the sharings in the locations are listed and the sentiments at these locations are analyzed by daily, weekly, and monthly basis. As a result, socially important locations of the city of Istanbul are discovered and temporal sentiment analysis of these locations are performed. Results shows that all of the socially important locations of İstanbul, except Beşiktaş Fish Market, showed emotional fluctuations over the time.

Keywords: Temporal sentiment analysis · Sentiment at socially important locations · Social media mining · Twitter

1 Introduction

Socially important locations are the locations where social media users frequently visit during their social media usage [1, 2]. Discovering socially important locations helps us getting valuable information about spatial preferences of social media users and important places of a social media user group [3]. Discovering socially important locations could be beneficial for several application areas, such as city management, user community discovery, and social media user groups' popular places discovery. However, spatial aspect may not provide enough information about the sentiment of a social media user group at socially important locations over time.