Daniel A. Alexandrov ·
Alexander V. Boukhanovsky ·
Andrei V. Chugunov · Yury Kabanov ·
Olessia Koltsova · Ilya Musabirov ·
Sergei Pashakhin (Eds.)

Communications in Computer and Information Science

1503

Digital Transformation and Global Society

6th International Conference, DTGS 2021 St. Petersburg, Russia, June 23–25, 2021 Revised Selected Papers





Communications in Computer and Information Science

1503

Editorial Board Members

Joaquim Filipe 10

Polytechnic Institute of Setúbal, Setúbal, Portugal

Ashish Ghosh

Indian Statistical Institute, Kolkata, India

Raquel Oliveira Prates

Federal University of Minas Gerais (UFMG), Belo Horizonte, Brazil

Lizhu Zhou

Tsinghua University, Beijing, China

More information about this series at https://link.springer.com/bookseries/7899

Daniel A. Alexandrov ·
Alexander V. Boukhanovsky ·
Andrei V. Chugunov · Yury Kabanov ·
Olessia Koltsova · Ilya Musabirov ·
Sergei Pashakhin (Eds.)

Digital Transformation and Global Society

6th International Conference, DTGS 2021 St. Petersburg, Russia, June 23–25, 2021 Revised Selected Papers



Editors

Daniel A. Alexandrov D

National Research University Higher School

of Economics

St. Petersburg, Russia

Andrei V. Chugunov ITMO University St. Petersburg, Russia

Olessia Koltsova

National Research University Higher School

of Economics

St. Petersburg, Russia

Sergei Pashakhin D

National Research University Higher School

of Economics

St. Petersburg, Russia

Alexander V. Boukhanovsky

ITMO University

St. Petersburg, Russia

Yury Kabanov (D)

National Research University Higher School

of Economics

St. Petersburg, Russia

Ilya Musabirov D

National Research University Higher School

of Economics

St. Petersburg, Russia

ISSN 1865-0929 ISSN 1865-0937 (electronic)
Communications in Computer and Information Science
ISBN 978-3-030-93714-0 ISBN 978-3-030-93715-7 (eBook)
https://doi.org/10.1007/978-3-030-93715-7

© Springer Nature Switzerland AG 2022

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

The 6th International Conference on Digital Transformation and Global Society (DTGS 2021), hosted by ITMO University (St. Petersburg, Russia) was held during June 23–25, 2021. Due to the COVID-19 pandemic, for the second time the conference was organized in the online format. Despite the challenging circumstances, the virtual format allowed us to organize a full-fledged conference, where the authors could present and discuss their research.

Overall, 95 papers were submitted to the conference this year. For this final post-conference volume, the Program Committee and the Editorial Board carefully evaluated and selected 38 papers, with an acceptance rate of 40 per cent, that fall into the following major sections of the conference:

- eSociety: issues related to social informatics, computational social science, and online media research, as well as the questions of the digital inclusion;
- ePolicy: issues of e-governance and e-participation, including the problems of cyberspace regulation;
- eCity: developments in smart city and digital urban research;
- eHumanities: digital culture and education research;
- eCommunication: research on the online discourses and public sphere;
- eEconomy: issues of e-commerce development, including research on the economic challenges of the COVID-19 pandemic.

This year the session on eSociety was organized in partnership with the Laboratory for Social and Cognitive Informatics at HSE University in St. Petersburg. In addition, HSE University once again co-organized the Youth Forum of the conference. Out of 20 papers submitted by the young scholars, the five best papers were accepted to the final volume based on the evaluation by the Award Committee and substantial revision based on peer-review. Furthermore, the session on eCity was held in partnership with the WeGO Eurasia Regional Office.

We express our gratitude to the members of the Program Committee for their help in selecting the papers for the conference. We would like to thank the Award Committee, including Alena Suvorova, Denis Bulygin, and Alla Loseva from HSE University, Olga Filatova from St. Peterbsurg State University, and Yuri Misnikov from ITMO University.

We are also grateful to the moderators of the sessions including Tatiana Sherstinova from HSE University, Aleksandr Riabushko from the WeGO Eurasia Regional Office, Yuri Misnikov Artem Smolin, and Igor Kuprienko from ITMO University, and Maxim Bakaev from the Novosibirsk State Technical University.

vi Preface

We thank our partners, organizers and hosts, and all those who made this event possible and successful.

June 2021

Daniel A. Alexandrov Alexander V. Boukhanovsky Andrei V. Chugunov Yury Kabanov Olessia Koltsova Ilya Musabirov Sergei Pashakhin

Organization

Program Chairs

Andrei V. Chugunov Yury Kabanov (Program Coordinator) ITMO University, Russia HSE University, Russia

Conference and Tracks Chairs

Daniel Alexandrov
Alexander Boukhanovsky
Olessia Koltsova
Ilya Musabirov
Sergey Pashakhin
HSE University, Russia
HSE University, Russia
HSE University, Russia
HSE University, Russia

Program Committee

Thomas Ågotnes University of Bergen, Norway
Roman Amelin Saratov State University, Russia
Dennis Anderson St. Francis College, USA

Francisco Andrade University of Minho, Portugal
Maxim Bakaev Novosibirsk State Technical University, Russia

Svetlana Berezka HSE University, Russia Alexander Bikkulov ITMO University, Russia

Radomir Bolgov St. Petersburg State University, Russia

Mikhail Bundin Lobachevsky State University of Nizhni Novgorod,

Russia

Anna Chizhik St. Petersburg State University, Russia

Sergey Davydov HSE University, Russia

Alexander Fedosov Russian State Social University, Russia Olga Filatova St. Petersburg State University, Russia

Carlos Gershenson UNAM, Mexico

Christoph Glauser Institute for Applied Argumentation Research,

Switzerland

Dimitris Gouscos

Sergei Ivanov

Katerina Kabassi

George Kampis

Ilia Karpov

Land Khadashala

DANERA Russia

University of Athens. Greece
ITMO University, Russia

TEI of Ionian Islands, Greece
Eotvos University, Hungary
HSE University, Russia

Igor Khodachek RANEPA, Russia
Nora Kirkizh GESIS, Germany
Sergei Koltcov HSE University, Russia

Pavel Konyukhonskiy Walter LaMendola

Elena Lisanyuk Anna Litvinenko

Aleksei Martynov

Harekrishna Misra Sergey Mityagin

Ravil Muhamedyev

Ilya Musabirov Aleksandra Nenko

Olga Nevzorova

Danila Parygin
Dmitry Prokudin

Aleksandr Riabushko Bogdan Romanov

John Magnus Roos

Anna Shirokanova Polina Smirnova Anna Smoliarova

Leonid Smorgunov Alexander Sokolov Irina Tolstikova

Lyudmila Vidiasova Arkaitz Zubiaga Herzen State Pedagogical University of Russia, Russia

University of Denver, USA

St. Petersburg State University, Russia Free University of Berlin, Germany

Lobachevsky State University of Nizhny Novgorod,

Russia

Institute of Rural Management Anand, India

ITMO University, Russia

International IT University, Kazakhstan

HSE University, Russia ITMO University, Russia

Kazan Federal University, Russia

Volgograd State Technical University, Russia

St. Petersburg State University, Russia WeGO Eurasia Regional Office, Russia

University of Tartu, Estonia

Centre for Consumer Science, Sweden

HSE University, Russia ITMO University, Russia

St. Petersburg State University, Russia St. Petersburg State University, Russia Demidov Yaroslavl State University, Russia

ITMO University, Russia ITMO University, Russia

Queen Mary University of London, UK

Additional Reviewers

Belyi, Vladislav Bulygin, Denis Busurkina, Irina Chuprina, Daria Kuchin, Yan Loseva, Alla Yakunin, Kirill

Contents

eSociety: Social Informatics and Digital Inclusion Issues	
What is Fake News? Perceptions, Definitions and Concerns by Gender and Political Orientation Among Israelis	3
A Semi-automated Pipeline for Mapping the Shifts and Continuities in Media Discourse	19
Average Nearest Neighbor Degree and Its Distribution in Social Networks Alexey Grigoriev, Sergei Sidorov, Sergei Mironov, and Igor Malinskii	36
Offline and Online Civic Activity: General and Special	51
Recognition of Signs and Movement Epentheses in Russian Sign Language	67
Digital Inclusion Through Sustainable Web Accessibility	83
Lövheim Cube-Backed Emotion Analysis: From Classification to Regression	97
Anti-vaccination Movement on VK: Information Exchange and Public Concern	108
Transformer Models for Question Answering on Autism Spectrum Disorder QA Dataset	122
ePolity: E-Governance and Regulation	
What Drives Adoption of E-Services in Russia?	137
Institutional Factors for Building Trust in Information Technologies: Case-Study of Saint Petersburg	152

Regulation Package	163
Kristina Cendic and Gergely Gosztonyi	
Lex Informatica: Information Technology as a Legal Tool	177
eCity: Smart Cities and Urban Planning	
Detection the Relevance of Urban Functions for Value-Based Smart City Management	193
Identifying Troubles and Expectations of the Citizens Towards Their Habitat Based on PPGIS Approach	207
Smart Technologies and Their Role in the Modernization of Non-motorized Urban Transport in Russia	222
Support for RoboCops: Measuring Effects of Attitudes Towards Police and Policing Technologies	237
eHumanities: Digital Education and Research Methods	
Learning Hard or Hardly Learning: Smartphones in the University's Classrooms	251
Designing Educational Trajectories for Generation Z: Identifying Cognitive Factors	266
Attitudes Towards Digital Educational Technologies, Academic Motivation and Academic Achievements Among Russian University Students	280
The Role of Values in Academic Cheating at University Online	294
Designing Workflow for Improving Literature Review Process Based on Co-citation Networks	308

Interpretable Machine Learning in Social Sciences: Use Cases and Limitations	319
Normalization Issues in Digital Literary Studies: Spelling, Literary Themes and Biographical Description of Writers	332
Prototyping of a Client for Board Games Automated Testing and Analysis Vlada Krainikova	347
eCommunication: Online Discources and Attitudes	
Automated Classification of Potentially Insulting Speech Acts on Social Network Sites	365
Following the Lead When Nothing is Certain? Exploring the Image of Russia in Kazakhstani and Ukrainian Digital News Media	375
Participation of Transnational Migrants in the Formation of the Host Country Image Through Mass Self-communication	389
Exploring the Parliamentary Discourse of the Russian Federation Using Topic Modeling Approach	403
The Other Side of Deplatforming: Right-Wing Telegram in the Wake of Trump's Twitter Ouster	417
eEconomy: Challenges of the COVID-19 Pandemic	
COVID-19 Pandemic Impact on Customer Loyalty Factors in Russian E-Commerce Market	431
Management and COVID-19: Digital Shift to Remote Work and Remote Management	446
Labor Demand and Supply Adaptation to the Pandemic-Induced Shock: Analysis of Online Recruitment Data in Novosibirsk region of Russia Irina Sizova, Maxim Bakaev, and Vladimir Khvorostov	461

on the Firm Level: Qualitative Insights from the Russian Market Megi Gogua, Vera Rebiazina, and Maria Smirnova	477
eEconomy: E-Commerce Research	
Fast-Growing eCommerce and Omnichannel Concept Development: Empirical Evidence from Russian Retail	493
Using Triple Exponential Smoothing and Autoregressive Models to Mining Equipment Details Sales Forecast	506
Facilitating Adoption of B2B e-Commerce Platforms	522
Worker's Motivation and Planning Strategies on Crowdsourcing Platforms. The Case of Yandex Toloka	536
Author Index	545