

NATURAL

LANGUAGE

ENGINEERING

Edited by

Ruslan Mitkov

John Tait

Branimir K. Boguraev

Volume 25 Part 3 May 2019

CAMBRIDGE UNIVERSITY PRESS

Minnin

Natural Language Engineering meets the needs of professionals and researchers working in all areas of automatic language processing, whether from the perspective of theoretical or corpus linguistics, translation, lexicography, computer science or engineering. Its aim is to bridge the gap between traditional computational linguistics research and the implementation of practical applications with potential real-world use. As well as publishing original research articles on a broad range of topics - from text analysis, machine translation, information retrieval, speech processing and generation to integrated systems and multi-modal interfaces - it also publishes special issues on specific natural language processing methods, tasks or applications. The journal welcomes survey papers describing the state of the art of a specific topic. The Journal of Natural Language Engineering also publishes the popular Industry Watch and Emerging Trends columns as well as book reviews.

EDITORS

Ruslan Mitkov (Executive Editor), University of Wolverhampton, UK. Email: R.Mitkov@wlv.ac.uk John I. Tait, johntait.net Ltd., UK. Email: john@johntait.net Branimir K. Boguraev, IBM Thomas J. Watson Research Center, USA. Email: bran@us.ibm.com

ASSOCIATE EDITOR

Diana Inkpen, University of Ottawa, Canada. Email: Diana.Inkpen@uottawa.ca

BOOK EDITOR

Diana Maynard, University of Sheffield, UK. Email: d.maynard@sheffield.ac.uk

INDUSTRY WATCH EDITOR

Robert Dale, Language Technology Group, Australia. Email: rdale@language-technology.com

EMERGING TRENDS EDITOR

Kenneth Church, Baidu, CA, USA. Email: kennethchurch@baidu.com

FOUNDING EDITOR

Roberto Garigliano, SenseGraph Ltd., UK.

EDITORIAL BOARD

Kevin Bretonnel Cohen, University of Colorado, USA Ondřej Bojar, Charles University, Czech Republic Gregory Grefenstette, Florida Institute for Human & Machine Cognition (IHMC), USA
Tracy Holloway King, A9 Amazon, USA
Jing Jiang, Singapore Management University
Sandra Kuebler, University of Indiana, USA
Lori Lamel, LIMSI, France
Suresh Manandhar, University of York, UK
Alessandro Moschitti, Amazon, USA
Preslav Nakov, Qatar Computing Research Institute,
HBKU, Qatar
Vivi Nastase, University of Heidelberg, Germany

Vivi Nastase, University of Heidelberg, Germany Roberto Navigli, Sapienza Universtiy of Rome, Italy Kemal Oflazer, Carnegie Mellon University, Qatar Constantin Orasan, University of Wolverhampton, UK Sebastian Padó, University of Stuttgart, Germany Simone Paolo Ponzetto, University of Mannheim, Germany Nasredine Semmar, CEA LIST, France Khalil Sima'an, University of Amsterdam, The Netherlands Richard Sproat, Google, USA Tomek Strzalkowski, University at Albany, USA Maite Taboada, Simon Fraser University, Canada Hwee Tou Ng, National University of Singapore, Singapore Alfonso Ureña López, University of Jaen, Spain Aline Villavicencio, Federal University of Rio Grande do Sul, Brazil and University of Essex, UK Xiaojun Wan, Peking University, China Bonnie Webber, University of Edinburgh, UK Min Zhang, Soochow University, China

EDITORIAL ASSISTANTS

Sandra Elfiky, University of Wolverhampton, UK Anna Feherova, University of Wolverhampton, UK April Harper, University of Wolverhampton, UK Sara Moze, University of Wolverhampton, UK Omid Rohanian, University of Wolverhampton, UK Shiva Taslimipoor, University of Wolverhampton, UK