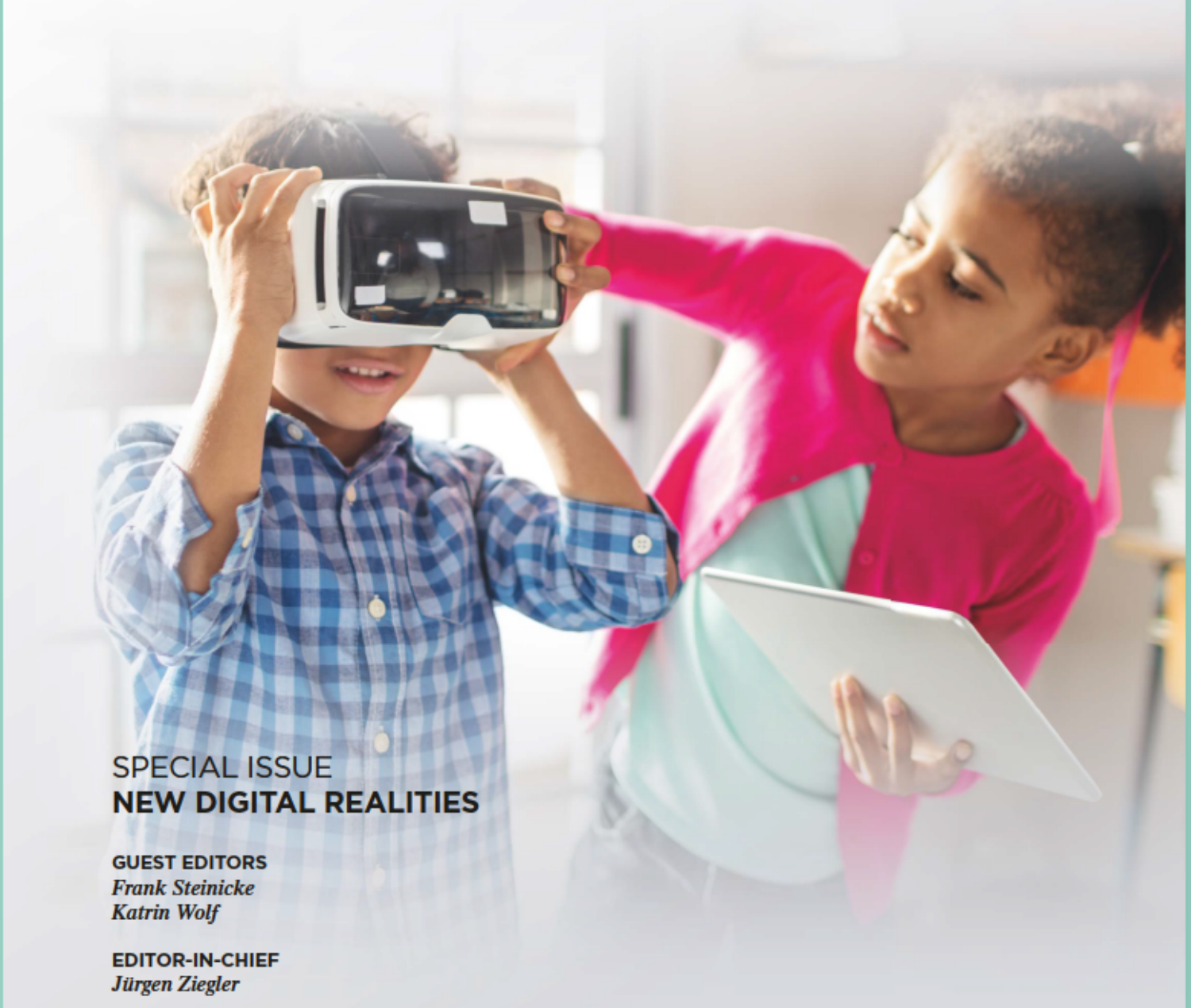
DE GRUYTER
OLDENBOURG

2020 · VOLUME 19 · ISSUE 2
ISSN 1618-162X · e-ISSN 2196-6826

i-com

JOURNAL OF INTERACTIVE MEDIA



SPECIAL ISSUE
NEW DIGITAL REALITIES

GUEST EDITORS
Frank Steinicke
Katrin Wolf

EDITOR-IN-CHIEF
Jürgen Ziegler

DE G

www.degruyter.com/journals/icom

i-com

JOURNAL OF INTERACTIVE MEDIA

EDITOR-IN-CHIEF
Jürgen Ziegler, University of Duisburg-Essen, Duisburg

CO-EDITORS
Susanne Boll, Carl von Ossietzky University of Oldenburg
Sarah Diefenbach, Ludwig-Maximilians-Universität München
Michael Herczeg, Universität zu Lübeck
Michael Koch, Universität der Bundeswehr München
Wolfgang Prinz, Fraunhofer Institute for Applied Information Technology FIT

EDITORIAL BOARD
Florian Alt, Universität der Bundeswehr München
Mirjam Augstein, FH Oberösterreich Hagenberg
Tanja Döring, University of Bremen
Marc Hassenzahl, University of Siegen
Thomas Herrmann, Ruhr University Bochum
Ulrike Lucke, University of Potsdam
Rainer Malaka, University of Bremen
Tilo Mentler, Universität zu Lübeck
Jasminko Novak, Stralsund University of Applied Sciences
Michael Prilla, Technical University Clausthal
Andreas Riener, Technische Hochschule Ingolstadt
Albrecht Schmidt, Ludwig-Maximilians-Universität München
Nava Tintarev, TU Delft
Gerhard Weber, Technical University Dresden
Martijn C. Willemsen, TU Eindhoven
Christian Wolters, Universität zu Lübeck

DE GRUYTER
OLDENBOURG

i-com is an interdisciplinary professional forum devoted to the area of interactive media. It aims at scientists from all fields, business practitioners and interested parties involved with user-appropriate design, development and application of new information and communication technologies. The journal focuses on papers which aim at improving life and work in the networked world by adapting technologies and applications to human requirements. Disciplines addressed by the journal include computer science, media design, psychology, labor and organizational studies, sociology, business management and marketing/branding.

ABSTRACTED/INDEXED IN ACM Digital Library · Baidu Scholar · Cabell's Directory · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC · DBLP Computer Science Bibliography · Dimensions · EBSCO (relevant databases) · EBSCO Discovery Service · Engineering Village · Genamics JournalSeek · Google Scholar · Inspec · Japan Science and Technology Agency (JST) · J-Gate · JournalGuide · JournalTOCs · KESLI-NDSL (Korean National Discovery for Science Leaders) · Microsoft Academic · Naviga (Softweco) · Primo Central (ExLibris) · Publons · ReadCube · Summon (Serials Solutions/ProQuest) · TDNet · TEMA Technik und Management · Ulrich's Periodicals Directory/ulrichsweb · WanFang Data · WorldCat (OCLC)

ISSN 1618-162X · e-ISSN 2196-6826

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/journals/icom.

RESPONSIBLE EDITOR Prof. Dr.-Ing. Jürgen Ziegler, Universität Duisburg-Essen
e-mail: juergen.ziegler@uni-due.de

EDITORIAL OFFICE Anne-Marie D. Hussein, M.A., Universität Duisburg-Essen
e-mail: i-com@uni-due.de

JOURNAL MANAGER Ulrike Kitzing, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany
Tel.: +49 (0)30 260 05-344
e-mail: ulrike.kitzing@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Diana Kostovic, De Gruyter, Genthiner Straße 13, 10785 Berlin, Germany
Tel.: +49 (0)30 260 05-170
e-mail: anzeigen@degruyter.com

© 2020 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING VTeX UAB, Lithuania

PRINTING Franz X. Stückle Druck und Verlag e.K., Ettenheim

Contents

Special Issue: New Digital Realities
Guest Editors: Frank Steinicke and Katrin Wolf

Editorial

Frank Steinicke and Katrin Wolf
New Digital Realities – Blending our Reality with Virtuality —— 61

Research Articles

Matthias Weise, Raphael Zender, and Ulrike Lucke
How Can I Grab That? —— 67

Robin Horst, Fabio Klonowski, Linda Rau, and Ralf Dörner
The Shared View Paradigm in Asymmetric Virtual Reality Setups —— 87

Carolin Wienrich and Johanna Gramlich
appRaiseVR – An Evaluation Framework for Immersive Experiences —— 103

Natalie Hube, Mathias Müller, Esther Lapczyna, and Jan Wojdziak
Mixed Reality based Collaboration for Design Processes —— 123

Thomas Schmidt, Miriam Schlindwein, Katharina Lichtner, and Christian Wolff
Investigating the Relationship Between Emotion Recognition Software and Usability Metrics —— 139

Martin Westhoven and Tim van der Grinten
Communicating Robotic Help Requests —— 153