PROCEEDINGS

IS&T International Symposium on
Electronic Imaging
SCIENCE AND TECHNOLOGY

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Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2018

Editors: **David Akopian,** The Univ. of Texas at San Antonio (United States),
Reiner Creutzburg, Technische Hochschule Brandenburg (Germany)

These papers represent the program of Electronic Imaging 2018,
held January 28 – February 1, 2018, at the Hyatt Regency San Francisco Airport in Burlingame, CA.

IS&T International Symposium on Electronic Imaging 2018
Mobile Devices and Multimedia: Enabling Technologies, Algorithms and Applications 2018

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556-1

Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2018

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Andrew Woods, Curtin University (Australia)

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Yong Rui, Microsoft Corporation (China)
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John Smith, IBM Thomas J. Watson Research Center (United States)
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Jarmo Takala, Tampere Univ. of Technology (Finland)
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Meng Wang, National Univ. of Singapore (Singapore)
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Jun Yang, Facebook Inc. (United States)

556-2

IS&T International Symposium on Electronic Imaging 2018
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Monday, January 29, 2018

Mobile Forensics

8:50 – 9:10 am
Sandpebble B

8:50   MOBMU-100

Cybersecurity and forensic challenges - A bibliographic review, *Reiner Creutzburg, Technische Hochschule Brandenburg (Germany)*

Mobile Health and Services

9:10 – 10:30 am
Sandpebble B

9:10   MOBMU-114

An integration of health tracking sensor applications and e-learning environments for cloud-based health promotion campaigns, *Devasena Inupakutika[1], Girish Vaidyanathan Natarajan[1], Sahak Kaghyan[1], David Akopian[1], Martin Evans[1,2], Yin Zenong[1], and Deborah Parra-Medina[2]; [1]The University of Texas at San Antonio and [2]The University of Texas at Austin (United States)*

9:30   MOBMU-115

Designing apps interoperable and functional on multiple mobile platforms using Google environment, *Devasena Inupakutika[1], Chetan Basutkar[1], Sahak Kaghyan[1], David Akopian[1], Patricia Chalela[2], Amelie G.Ramirez[2], and Alfred Mcalister[2]; [1]The University of Texas at San Antonio and [2]University of Texas Health Science at San Antonio (United States)*

9:50   MOBMU-116

Low-cost medical infrastructure: Triage as intelligent decision support, *Marius Liefold, Dennis Wagner, Alexander Pokraka, and Thomas Schrader, Technische Hochschule Brandenburg (Germany)*

10:10   MOBMU-117

Review of interactive communication systems for business to business (B2B) services, *Sahak Kaghyan, Shubham Sarpal, Andrei Zorilescu, and David Akopian, The University of Texas at San Antonio (United States)*

10:30 – 10:50 am   Coffee Break

Cameras, Sensors, Supporting Methods

10:50 am – 12:30 pm
Sandpebble B

10:50   MOBMU-135 [no paper]

Open mobile platform with geo-, color-, and spectro-metrical sensor systems for quality assurance in research and development, design and production, application and maintenance as well as in education and training, *Dietrich Hofmann, Paul-Gerald Dittrich, Randolf Margul, Daniel Kraus, and Daniel Schererz, Technologie- und Innovationspark Jena GmbH (Germany)*

11:10   MOBMU-136

Volumetric terrain rendering with WebGL, *Raoul van Rüschen[1], Simon McCallum[2], Stefan Kim[1], and Reiner Creutzburg[1]; [1]Technische Hochschule Brandenburg (Germany) and [2]Norwegian University of Science and Technology (NTNU) (Norway)*

11:30   MOBMU-137 [no paper]

Characterization and correction of multispectral filter-on-chip CMOS-sensor-systems for spatial resolved spectral and color measurements, *Paul-Gerald Dittrich[1], Maik Rosenberger[2], Dietrich Hofmann[1], and Gunther Notni[2]; [1]Technologie- und Innovationspark Jena GmbH and [2]TU Ilmenau (Germany)*

11:50   MOBMU-138

Comparing ACES Input Device Transforms for the Canon EOS 5D Mark III DSLR camera, *Eberhard Hasche, Oliver Karaschewski, and Reiner Creutzburg, Brandenburg University of Applied Sciences (Germany)*

12:10   MOBMU-139

Comparing different ACES Input Device Transforms (IDTs) for the RED Scarlet-X camera, *Eberhard Hasche, Oliver Karaschewski, and Reiner Creutzburg, Brandenburg University of Applied Sciences (Germany)*

Plenary Session

2:00 – 3:00 pm
Grand Peninsula Ballroom D

Overview of Modern Machine Learning and Deep Neural Networks - Impact on Imaging and the Field of Computer Vision, *Greg Corrado, Google, Inc. (United States)*

Dr. Greg Corrado, co-founder of Google Brain, principal scientist, and director of augmented intelligence research at Google, provides an overview of modern machine learning and deep neural networks, with particular attention to its impact on imaging and the field of computer vision.

Dr. Corrado is a senior research scientist interested in biological neuroscience, artificial intelligence, and scalable machine learning. He has published in fields ranging across behavioral economics, neuromorphic device physics, systems neuroscience, and deep learning. At Google he has worked for some time on brain inspired computing, and most recently has served as one of the founding members and the co-technical lead of Google's large scale deep neural networks project. Prior to joining Google, Dr. Corrado was a staff research scientist at IBM. He received his MS in computer science and PhD in neuroscience from Stanford University.

5:00 – 6:00 pm   All-Conference Welcome Reception

IS&T International Symposium on Electronic Imaging 2018
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556-3

Wednesday, January 31, 2018

10:00 am – 4:00 pm Industry Exhibition

Plenary Session

2:00 – 3:00 pm
Grand Peninsula Ballroom D

Ubiquitous, Consumer AR Systems to Supplant Smartphones, *Ronald T. Azuma, Intel, Corp. (United States)*

Dr. Ronald T. Azuma, researcher and augmented reality pioneer, shares his vision for achieving ubiquitous, consumer AR systems. Recent large investments in augmented reality reflect the commercial interest in its inherent potential to replace current smartphone technology, but much remains to be done. In his talk, Dr. Azuma gives a vision for achieving this goal, which requires not just solving numerous technical challenges but also determining new, compelling AR experiences that will establish AR as a new platform and novel form of media.

Dr. Azuma leads a team in Intel Labs that designs and prototypes novel experiences and key enabling technologies to enable new forms of media. These technology areas include computational imaging and photography, computational displays, and head-worn displays. Dr. Azuma is recognized as a pioneer and innovator in augmented reality, and has held prominent leadership roles in that research area, including leading and implementing research projects and demonstrations in areas such as AR, visualization, and mobile applications. Dr. Azuma received his BSc (1988) in electrical engineering from University of California, Berkeley, and MS (1990) and PhD (1995) in computer science from University of North Carolina, Chapel Hill. Prior to joining Intel, he was a research leader at Nokia Research Center Hollywood, and a senior researcher at Hughes Research Laboratories.

Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2018 Interactive (Poster) Papers Session

5:30 – 7:00 pm
The Grove
The following works will be presented at the EI 2018 Symposium Interactive Papers Session.

MOBMU-406

Development of a mobile deployable technical system for the secure and paperless exchange of information between general practitioners and doctors' practices out in the field and laboratories, *Knut Bellin[1], Christian Sauer[2], Marcel Haase[2], Pascal Schröder[2], René Mewes[2], and Reiner Creutzburg[1]; [1]Technische Hochschule Brandenburg and [2]vireq software solutions GmbH & Co. KG (Germany)*

MOBMU-407 [no paper]

Pokemon Go – Bibliographic review, security and privacy aspects, and forensic analysis, *Vadim Kushnir, Knut Bellin, and Reiner Creutzburg, Technische Hochschule Brandenburg (Germany)*

MOBMU-408 [no paper]

The strange world of keyloggers - An overview, *Reiner Creutzburg, Technische Hochschule Brandenburg (Germany)*

Meet the Future: A Showcase of Student and Young Professionals Research

5:30 – 7:30 pm
The Grove

556-4

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