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PROCEEDINGS

Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2017

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

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Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2017

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Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2017

Wednesday, February 1, 2017

Mobile Sensors, Localization, and Applications

Session Chair: David Akopian, The University of Texas at San Antonio (United States)

8:50 – 10:10 am

Grand Peninsula Ballroom B

8:50

Introduction to WLAN-based indoor positioning of mobile devices (Invited), David Akopian, Ali Khalajmehrabadi, and Nikolaos Gatsis, The University of Texas at San Antonio (United States) [MOB MU-292]

9:10

Android door/window image-based measurements application, Khader Mohammad, Ahmad Alsadeh, Amer Qarabsa, Shatha Khalil, and Mona Dirieh, Birzeit University (Palestine) [MOB MU-299]

9:30

Usability of smart mobile micro photonic sensor systems for industrial and non-industrial quality assurance, Paul-Gerald Dittrich^{1,2} and Dietrich Hofmann¹; ¹Technologie- und Innovationspark Jena GmbH and ²Technische Universität Ilmenau (Germany) [MOB MU-293]

9:50

Blackmagic production camera raw color investigation by spectral analysis of Macbeth color charts, Eberhard Hasche, Thomas Schrader, and Reiner Creutzburg, Technische Hochschule Brandenburg - Brandenburg University of Applied Science (Germany) [MOB MU-294]

10:10

Liquid crystal lens characterization for integrated depth sensing and all in focus imaging application, Simon Emberger¹, Laurent Alacoque¹, Antoine Dupret¹, Capucine Lecat-Mathieu de Boissac¹, Jean Louis de Bougrenet de la Tocnaye², and Nicolas Fraval³; ¹CEA Leti, ²Telecom Bretagne, and ³Evosens (France) [MOB MU-295]

10:00 am – 4:00 pm Industry Exhibition

10:30 – 11:00 am Coffee Break

Emerging Applications and Methods

Session Chair: Reiner Creutzburg, Brandenburg University of Applied Sciences (Germany)

11:00 am – 12:20 pm

Grand Peninsula Ballroom B

11:00

A billion words to remember, George Nagy, Rensselaer Polytechnic Institute (United States) [MOB MU-297]

11:20

Demographic prediction based on mobile user data, Lyubov Podoyntsina, Alexander Romanenko, Konstantin Kryzhanovskiy, and Andrey Moiseenko, Samsung R&D Institute (Russian Federation) [MOB MU-298]

11:40

Optimizing video transmission for mobile devices, Chulhee Lee, Sangwook Baek, Guiwon Seo, Jaemin Ryu, and Kyung-Won Kang, Yonsei University (Republic of Korea) [MOB MU-300]

12:00

Comparative visualization of the geometry of a hollow box girder using 3D-LiDAR – Part 2: Reconstruction of a 3D geometric model, Stefan Maack¹, Jenny Knackmuss², and Reiner Creutzburg²; ¹Bundesanstalt für Materialprüfung and ²Technische Hochschule Brandenburg (Germany) [MOB MU-308]

12:20 – 2:00 pm Lunch Break

EI 2017 Wednesday Plenary and Symposium Awards

Session Chairs: Joyce E. Farrell, Stanford University, and Nitin Sampat, Rochester Institute of Technology (United States)

2:00 – 3:00 pm

Grand Peninsula Ballroom D

Designing VR video camera systems, Brian Cabral, Facebook, Inc. (United States)

Brian Cabral is Director of Engineering at Facebook, leading the Surround 360 VR camera team, specializing in computational photography, computer vision, and computer graphics. He has published a number of papers in the area of computer graphics and imaging including the pioneering Line Integral Convolution algorithm. Cabral discusses developing Facebook Surround 360, an open, high-quality 3D-360 video capture system. VR video capture systems are composed of multiple optical and digital components – all of which must operate as if they are one seamless optical system. The design of VR video cameras, optical choices, SNR, etc., require a new set of technologies and engineering approaches, with tight coupling to the computational system components.

3:00 – 3:30 pm Coffee Break

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5

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Mobile Security, Safety, Privacy, Forensics

Session Chair: David Akopian, The University of Texas at San Antonio (United States)

3:30 – 4:50 am

Grand Peninsula Ballroom B

3:30 65

Investigation of security relevant aspects of Android eHealth Apps: Permissions, storage properties, and data transmission, Jenny Knackmuss¹, Eric Clausing², and Reiner Creutzburg¹; ¹Technische Hochschule Brandenburg and ²AV-Test GmbH (Germany) [MOB MU-301]

3:50 76

Privacy issues in mobile health applications - Assessment of current Android Health Apps, Anett Hoppe¹, Jenny Knackmuss², Maik Morgenstern¹, and Reiner Creutzburg²; ¹AV-Test GmbH and ²Technische Hochschule Brandenburg (Germany) [MOB MU-302]

4:10 84

A forensic mobile application designed for both steganalysis and steganography in digital images, Enping Li¹ and Jun Yu²; ¹Bridgewater State University and ²Marvell Semiconductors, Inc. (United States) [MOB MU-303]

4:30
Pokemon Go - A forensic analysis, Reiner Creutzburg, Technische Hochschule Brandenburg (Germany) [MOB MU-304]

Mobile Computing and Data Processing

Session Chair: Reiner Creutzburg, Brandenburg University of Applied Sciences (Germany)

4:50 – 5:30 pm

Grand Peninsula Ballroom B

4:50 90

Computation of equidistant curve for the image with blurred contours, Evgeny Semenishchev¹, Igor Shraifel¹, Viacheslav Voronin¹, and Ekaterina Epishina²; ¹Don State Technical University and ²LLC Scientific Enterprise «Tsezis» (Russian Federation) [MOB MU-305]

5:10 97

Prune the convolutional neural networks with Sparse Shrink, Xin Li and Changsong Liu, Tsinghua University (China) [MOB MU-306]

Mobile Devices and Multimedia: Enabling Technologies, Algorithms, and Applications 2017 Interactive Papers Session

5:30 – 7:00 pm

Atrium

The following works will be presented at the EI 2017 Symposium Interactive Papers Session.

102
Automated segmentation of ophthalmological OCT images, Friedrich Müller¹ and Reiner Creutzburg²; ¹Nürnberger Str. 24a and ²Technische Hochschule Brandenburg (Germany) [MOB MU-307]

112
Concept for software-based configuration of the organizational and technical security of a company of arbitrary size, Thomas Möller¹, Knut Bellin², and Reiner Creutzburg²; ¹Assecor GmbH and ²Technische Hochschule Brandenburg (Germany) [MOB MU-309]

Facilitated polling approach for SMS and IP messaging applications, Shruti Mahadik, Rodrigo Escobar, Sahak Kaghyan, and David Akopian, The University of Texas at San Antonio (United States) [MOB MU-310]

120
A study of IoT MQTT control packet behavior and its effect on communication delays, Brian Bendele and David Akopian, The University of Texas San Antonio (United States) [MOB MU-311]

130
Semi-automatic generation of multilingual lecture notes - Wikipedia books on different subjects in various languages for blended learning applications, Reiner Creutzburg, Technische Hochschule Brandenburg (Germany) [MOB MU-312]

139
The strange world of keyloggers - An overview, Part 1, Reiner Creutzburg, Technische Hochschule Brandenburg (Germany) [MOB MU-313]

149
The study of algorithms reducing the level of out-of-band radiation and inter carrier interference of the OFDM signal, Valentin Fedosov¹, Viacheslav Voronin², Andrey Legin¹, Anna Lomakina¹, and Danila Kovtun¹; ¹South Federal University and ²Don State Technical University (Russian Federation) [MOB MU-314]

155
Two-tier state-machine programming for messaging applications, Jafet Morales¹, Rodrigo Escobar¹, Sahak Kaghyan¹, Girish Vaidyanathan Natarajan¹, David Akopian¹, P. Chalela², A. Ramirez², and A. McAlister³; ¹The University of Texas at San Antonio, ²UT Health Science Center at San Antonio, and ³University of Texas, School of Public Health at Austin Regional Campus (United States) [MOB MU-315]