

# **2019 7th IEEE International Conference on Mobile Cloud Computing, Services, and Engineering (MobileCloud 2019)**

**Newark, California, USA  
4-9 April 2019**



**IEEE Catalog Number: CFP19MCC-POD  
ISBN: 978-1-7281-0464-5**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19MCC-POD
ISBN (Print-On-Demand):	978-1-7281-0464-5
ISBN (Online):	978-1-7281-0463-8
ISSN:	2573-7554

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2019 7th IEEE International Conference on Mobile Cloud Computing, Services, and Engineering (MobileCloud) **MobileCloud 2019**

## Table of Contents

Welcome Message from the IEEE Mobile Cloud 2019 General Chairs	viii
Welcome Message from the IEEE Mobile Cloud 2019 Program Chairs	ix
Mobile Cloud 2019 Committees	x

## IEEE Mobile Cloud 2019 - The Seventh IEEE International Conference on Mobile Cloud Computing, Services, and Engineering

### Mobile Edge Computing

Hierarchical Cloud-Fog Platform for Communication in Disaster Incident Coordination	1
<i>Duo Jiang (University of Missouri-Columbia), Rui Huang (University of Missouri-Columbia), Prasad Calyam (University of Missouri-Columbia), John Gillis (University of Missouri-Columbia), Olivia Apperson (University of Missouri-Columbia), Dmitrii Chemodanov (University of Missouri-Columbia), Fatih Demir (Northern Illinois University), and Salman Ahmad (University of Missouri-Columbia)</i>	
A Human-Centric Cloud and Fog-Assisted IoT Platform for Disaster Management	8
<i>Bikesh Maharjan (North Dakota State University), Juan Li (North Dakota State University), Shadi Alian (North Dakota State University), and Yan Bai (Univ. of Washington Tacoma)</i>	

### Mobile Cloud and Networking

Cloud, Fog, and Dew Robotics: Architectures for Next Generation Applications	16
<i>Alessio Botta (University of Napoli Federico II), Luigi Gallo (University of Napoli Federico II), and Giorgio Ventre (University of Napoli Federico II)</i>	
Low-Energy Smart Cities Network with LoRa and Bluetooth	24
<i>Célio Márcio Soares Ferreira (UFOP (Federal University of Ouro Preto)), Ricardo Augusto Rabelo Oliveira (UFOP (Federal University of Ouro Preto)), and Jorge Sá Silva (University of Coimbra)</i>	

Smart Resource Planning for Live Migration in Edge Computing for Industrial Scenario .30.....  
*Keerthana Govindaraj (Corporate Sector Research and Advance Engineering), Jibin Pathapparambil John (University of Bremen), Alexander Artemenko (Robert Bosch GmbH), and Andreas Kirstaedter (University of Stuttgart)*

## **Mobile Cloud and Applications**

Asterism: Decentralized File Sharing Application for Mobile Devices .38.....  
*Olli-Pekka Heinisuo (Tampere University), Valentina Lenarduzzi (Tampere University), and Davide Taibi (Tampere University)*

Study Area Recommendation via Network Log Analytics .48.....  
*Anupama Upadhyaya (San Jose State University), Avinash Ravilla (San Jose State University), Ishwarya Varadarajan (San Jose State University), Sowmya Viswanathan (San Jose State University), and David C. Anastasiu (San Jose State University)*

Wireless ECG Biometric Authentication via the Mobile Cloud .56.....  
*Mohammad Derawi (Norwegian University of Science and Technology), Faouzi Alaya Cheikh (Norwegian University of Science and Technology), and Mohammed Bouzidi (Norwegian University of Science and Technology)*

Predict Next Choice of Smartphone App Based on Long Short-Term Memory Model .62.....  
*Zhengui Xiang (Huawei Technologies Co., Ltd.)*

## **Resource Managements on Mobile Cloud**

MAMoC-Android: Multisite Adaptive Computation Offloading for Android Applications .68.....  
*Dawand Sulaiman (University of St Andrews) and Adam Barker (University of St Andrews)*

Throughput Optimized Scheduler for Dispersed Computing Systems .76.....  
*Diyi Hu (University of Southern California) and Bhaskar Krishnamachari (University of Southern California)*

Enabling High Availability Edge Computing Platform .85.....  
*Deepa Rajendra Sangolli (San Jose State University), Nagthej Manangi Ravindraro (San Jose State University), Priyanka Chidambar Patil (San Jose State University), Thrishna Palissery (San Jose State University), and Kaikai Liu (San Jose State University)*

## **SeTM - International Workshop of Security and Trust in Mobile Network 2019**

Design and Development of an IoT Home Network Monitoring System .93.....  
*Garen Kutukian (Cal Poly Pomona) and Mohammad Husain (Cal Poly Pomona)*

Lightweight IoT Group Key Establishment Scheme from the One Time Pad .101.....  
*Teklay Gebremichael (Mid Sweden University), Ulf Jennehag (Mid Sweden University), and Mikael Gidlund (Mid Sweden University)*

**Author Index 107** .....