

**2023 IEEE/ACM 10th
International Conference on
Mobile Software Engineering and
Systems (MOBILESoft 2023)**

**Melbourne, Australia
14 – 15 May 2023**



**IEEE Catalog Number: CFP23D49-POD
ISBN: 979-8-3503-1183-9**

**Copyright © 2023 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:	CFP23D49-POD
ISBN (Print-On-Demand):	979-8-3503-1183-9
ISBN (Online):	979-8-3503-1182-2

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
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2023 IEEE/ACM 10th International Conference on Mobile Software Engineering and Systems (MOBILESoft) **MOBILESoft 2023**

Table of Contents

Message from the Chairs	vii
Organizing Committee	viii
Program Committee	ix

10th International Conference on Mobile Software Engineering and Systems 2023 (MOBILESoft 2023)

Reducing the Impact of Breaking Changes to Web Service Clients During Web API Evolution	1
<i>Paul Schmiedmayer (Technical University of Munich, Germany; Stanford University, USA), Andreas Bauer (Technical University of Munich, Germany), and Bernd Bruegge (Technical University of Munich, Germany)</i>	
FirmwareDroid: Towards Automated Static Analysis of Pre-Installed Android Apps	12
<i>Thomas Sutter (Zurich University of Applied Sciences, Switzerland) and Bernhard Tellenbach (Cyber-Defence Campus Armasuisse, Switzerland)</i>	
Analysis of Library Dependency Networks of Package Managers Used in iOS Development	23
<i>Kristiina Rahkema (University of Tartu, Estonia), Dietmar Pfahl (University of Tartu, Estonia), and Rudolf Ramler (Software Competence Center Hagenberg (SCCH) GmbH, Austria)</i>	
Understanding the Impact of Fingerprinting in Android Hybrid Apps	28
<i>Abhishek Tiwari (University of Passau, Germany), Jyoti Prakash (University of Passau, Germany), Alimerdan Rahimov (University of Passau, Germany), and Christian Hammer (University of Passau, Germany)</i>	
Issue-Labeler: An ALBERT-Based Jira Plugin for Issue Classification	40
<i>Waleed Alhindi (Prince Mohammad bin Fahd University, Saudi Arabia), Abdulrahman Aleid (Prince Mohammad bin Fahd University, Saudi Arabia), Ilyes Jenhani (Prince Mohammad bin Fahd University, Saudi Arabia), and Mohamed Wiem Mkaouer (Rochester Institute of Technology, United States)</i>	

Native vs Web Apps: Comparing the Energy Consumption and Performance of Android Apps and their Web Counterparts	44
<i>Ruben Horn (Vrije Universiteit Amsterdam, The Netherlands), Abdellah Lahnaoui (Vrije Universiteit Amsterdam, The Netherlands), Edgardo Reinoso (Vrije Universiteit Amsterdam, The Netherlands), Sicheng Peng (Vrije Universiteit Amsterdam, The Netherlands), Vadim Isakov (Vrije Universiteit Amsterdam, The Netherlands), Tanjina Islam (Vrije Universiteit Amsterdam, The Netherlands), and Ivano Malavolta (Vrije Universiteit Amsterdam, The Netherlands)</i>	
Ebserver: Automating Resource-Usage Data Collection of Android Applications	55
<i>Wellington Oliveira (University of Lisbon, Portugal), Bernardo Moraes (Federal University of Pernambuco, Brazil), Fernando Castor (Utrecht University, Netherlands), and João Paulo Fernandes (University of Porto, Portugal)</i>	
Vulnerability Propagation in Package Managers Used in iOS Development	60
<i>Kristiina Rahkema (University of Tartu, Estonia) and Dietmar Pfahl (University of Tartu, Estonia)</i>	
Sensitive and Personal Data: What Exactly Are You Talking About?	70
<i>Maria Kober (n/a), Jordan Samhi (University of Luxembourg, Luxembourg), Steven Arzt (Fraunhofer Insititute for Secure Information Technology, Germany), Tegawendé F. Bissyandé (University of Luxembourg, Luxembourg), and Jacques Klein (University of Luxembourg, Luxembourg)</i>	
Energy-Saving Strategies for Mobile Web Apps and Their Measurement: Results from a Decade of Research	75
<i>Benedikt Dornauer (University of Innsbruck, Austria; University of Cologne, Germany) and Michael Felderer (University of Innsbruck, Austria;University of Cologne;German Aerospace Center (DLR), Germany)</i>	
On Security and Energy Efficiency in Android Smartphones	87
<i>Joao Ferreira (University of Coimbra, Portugal;Federal Rural University of Pernambuco, Brazil), Bernardo Santos (University of Porto, Portugal), Wellington Oliveira (University of Lisbon, Portugal), Nuno Antunes (Universtity of Coimbra, Portugal), Bruno Cabral (Universtity of Coimbra, Portugal), and Joao Paulo Fernandes (University of Porto, Portugal)</i>	
Author Index	97