

# **2018 IEEE/ACM 1st International Workshop on Emerging Trends in Software Engineering for Blockchain (WETSEB 2018)**

**Gothenburg, Sweden  
27 May – 3 June 2018**



**IEEE Catalog Number: CFP18P78-POD  
ISBN: 978-1-5386-6177-2**

**Copyright © 2018, Association for Computing Machinery (ACM)  
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:	CFP18P78-POD
ISBN (Print-On-Demand):	978-1-5386-6177-2
ISBN (Online):	978-1-4503-5726-5

**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

# 2018 ACM/IEEE 1st International Workshop on Emerging Trends in Software Engineering for Blockchain **WETSEB 2018**

## Table of Contents

Message from the ICSE 2018 General Chair	vii
Message from the WETSEB 2018 Co-Chairs	x
Organizing Committee for WETSEB 2018	xi
Program Committee for WETSEB 2018	xii
ICSE 2018 Sponsors and Supporters	xiii

## Smart Contracts

Ethereum Query Language	1
<i>Santiago Bragagnolo (Inria Lille - Nord Europe), Henrique Rocha (Inria Lille - Nord Europe), Marcus Denker (Inria Lille - Nord Europe), and Stéphane Ducasse (Inria Lille - Nord Europe)</i>	
SmartCheck: Static Analysis of Ethereum Smart Contracts	9
<i>Sergei Tikhomirov (University of Luxembourg), Ekaterina Voskresenskaya (SmartDec), Ivan Ivanitskiy (SmartDec), Ramil Takhaviev (SmartDec), Evgeny Marchenko (SmartDec), and Yaroslav Alexandrov (SmartDec)</i>	
NECTAR: Non-Interactive Smart Contract Protocol Using Blockchain Technology	17
<i>Alexandra Covaci (nChain), Simone Madeo (nChain), Patrick Motylinski (nChain), and Stéphane Vincent (nChain)</i>	

## Blockchain and Applications (1)

Evaluating Complexity and Digitizability of Regulations and Contracts for a Blockchain Application Design	25
<i>Pradeepkumar D S (Accenture Labs), Kapil Singi (Accenture Labs), Vikrant Kaulgud (Accenture Labs), and Sanjay Podder (Accenture Labs)</i>	
SHARVOT: Secret SHARE-Based VOTing on the Blockchain	30
<i>Silvia Bartolucci (nChain), Pauline Bernat (nChain), and Daniel Joseph (nChain)</i>	
Towards Analyzing the Complexity Landscape of Solidity Based Ethereum Smart Contracts	35
<i>Péter Hegedus (University of Szeged)</i>	

ReviewChain: Untampered Product Reviews on the Blockchain .40.....	
<i>Daniel Martens (University of Hamburg) and Walid Maalej (University of Hamburg)</i>	

## Blockchain and Applications (2)

How Much Blockchain Do You Need? Towards a Concept for Building Hybrid DApp Architectures .44.....	
<i>Florian Wessling (paluno/University of Duisburg-Essen), Christopher Ehmke (paluno/University of Duisburg-Essen), Marc Hesenius (paluno/University of Duisburg-Essen), and Volker Gruhn (paluno/University of Duisburg-Essen)</i>	
Proof-of-Property - A Lightweight and Scalable Blockchain Protocol .48.....	
<i>Christopher Ehmke (University of Duisburg-Essen), Florian Wessling (University of Duisburg-Essen), and Christoph M. Friedrich (University of Applied Sciences and Arts Dortmund)</i>	
Preliminary Steps Towards Modeling Blockchain Oriented Software .52.....	
<i>Henrique Rocha (Inria Lille - Nord Europe) and Stéphane Ducasse (Inria Lille - Nord Europe)</i>	
<b>Author Index 59</b> .....	