

# Table of Contents

<b>Keynote</b>	<b>1</b>
The Promise and Pitfalls of Computational Biology, or How to Convince Biologists You Do More Than Push Buttons on a Keyboard <i>Scott T. Kelley</i> .....	1
<b>Software Engineering I</b>	<b>3</b>
Highly Accurate Marketing Source Attribution for Android Out-of-Store Apps <i>Kaushik Wavhal, Abhishek Bharti, Divyesh Topia, Vivek Shah, Monish Shah, Jignesh Karelia</i> .....	3
A Dynamic, Real-time Algorithm for Seed Counting <i>Mitchell Neilsen, Chaney Courtney, Siddharth Amaravadi, Zhiqiang Xiong, Jesse Poland, Trevor Rife</i> .....	7
Game Theme Based Instructional Module to Teach Binary Trees Data Structure <i>Sarika Rajeev, Sharad Sharma, Atma Sahu</i> .....	13
Mobile Augmented Reality Application for Building Evacuation Using Intelligent Signs <i>James Stigall, Sharad Sharma</i> .....	19
<b>Software Engineering II</b>	<b>25</b>
Avaler’s Adventure: an Open Source Game for Dysphagia Therapy <i>Catherine R. Pollock, Daniel A. Lopez, Gunnar Wambaugh, Luis Almanzar, Amanda Morrissey, Kathryn Krings, Kristine Galek, Frederick C. Harris Jr.</i> .....	25
Climate Hangman - A Word Challenge Educational Game <i>Sonu Jose, Aswathi Mohan, Sergiu M. Dascalu, Sushil J. Louis, Siming Liu</i> .....	31
Visualization of Dynamic Fluid Characteristics for Hose and Pipeline Systems in Army Operational Environment <i>Peter J. Grazaitis, Mark R. Cammarere</i> .....	37
Investigating the Feasibility of using a Microsoft™ HoloLens as a Robotic Sensor and Odometry Source <i>Esteban Segarra, Bradford Towle Jr.</i> .....	41
<b>Data Engineering I</b>	<b>47</b>
Modeling End User Empowerment in Big Data Applications <i>Marco X. Bornschlegl, Matthias L. Hemmje</i> .....	47
Statistical Analysis of Effort, Duration and Quality Data for Software Enhancement Projects <i>Cuauhtémoc López-Martin</i> .....	55
A Mobile Quality Assurance Application for the NRDC <i>Hannah Muñoz, Connor Scully-Allsion, Vinh Le, Scotty Strachan, Frederick C. Harris Jr., Sergiu M. Dascalu</i> .....	61
<b>Software Engineering III</b>	<b>67</b>
Mitigation of Human Systems Integration (HSI) Issues of Army Maintenance Processes: A Case Study <i>Riannon M. Hazell, Seth G. Nelson, Gary Bowman</i> .....	67
Prevalence of Vulnerable Code Among Scientific Software Systems <i>Melissa Sarnowski, Saleh Alnaeli</i> .....	73
Reliability Assessment and Prediction with Testing Efficiency Growth for Open Source Software <i>Yuli Tian, Jeff Tian, Ning Li</i> .....	77
Feature Extraction Method based on Goal–Scenario Coupling Model <i>Jeong Ah Kim, SunTae Kim</i> .....	85

<b>Framework and Infrastructure Design</b>	<b>93</b>
Software Infrastructure to Reduce the Cost and Time of Building Enterprise Software Applications: Practices and Case Studies	
<i>Jalal Kiswani, Muhanna Muhanna, Sergiu M. Dascalu, Frederick C. Harris Jr.</i> .....	93
A Functionality-driven Design of a Centralized Home Automation Internet of Things Framework with a Dynamically Generated Web Interface	
<i>Samer Mansour, Marcel Karam</i> .....	99
Access Control Mechanism Using Ethereum Blockchain	
<i>Abhinav Kalra, Syed Shahzeb Hasnain, Peter Bodorik, Dawn Jutla</i> .....	107
A Bare Machine RAID File System for USBs	
<i>Hamdan Z. Alabsi, William V. Thompson, Ramesh K. Karne, Alexander L. Wijesinha, Rasha A. Almajed, Faris A. Almansour</i> .....	113
<b>Software Engineering IV</b>	<b>119</b>
ARIA: Efficient Music Festival Manager	
<i>David A. Mar Jr., Emily Huang, Vladislav B. Savranschi, Renee T. Inuma, Wesley Kepke, Ernest Landrito, Kyle Lee, Cynthia R. Harris, Sergiu M. Dascalu, Frederick C. Harris Jr.</i> .....	119
Hedonic House Pricing Model using Deep Learning	
<i>Timothy Oladunni, Sharad Sharma</i> .....	125
Using Classifiers for Software Defect Detection	
<i>Logan Perreault, Seth Berardinelli, Clemente Izurieta, John Sheppard</i> .....	131
<b>Author Index</b>	<b>139</b>