



The Second ACM/IEEE Symposium on Edge Computing

SEC 2017 Program at a Glance

WEDNESDAY, OCTOBER 11 (Gazebo)	
18:00 – 20:00	Welcome reception

THURSDAY, OCTOBER 12 (Ballroom II + III + IV)	
07:00 – 08:00	Breakfast (Boardroom)
08:15 – 08:30	Opening remarks
08:30 – 09:30	Keynote Speech 1: Mahadev Satyanarayanan (Satya)
09:30 – 10:00	Coffee break (Boardroom Foyer)
10:00 – 11:30	Session I - Vehicular Edge Computing
11:30 – 12:45	Lunch (Boardroom)
12:45 – 14:15	Session II – Management
14:15 – 14:30	Coffee break (Boardroom Foyer)
14:30 – 15:30	Panel: Enabling technologies for Edge Computing
15:30 – 15:45	Coffee break (Boardroom Foyer)
15:45 – 17:15	Session III - Applications
17:15 – 18:30	Poster Session (VIP Room)
19:00 – 20:00	Banquet (Boardroom)

FRIDAY, OCTOBER 13 (Ballroom II + III + IV)	
07:00 – 08:00	Breakfast (Boardroom)
08:30 – 09:30	Keynote Speech 2: Pablo Rodriguez
09:30 – 10:00	Coffee break (Boardroom Foyer)
10:00 – 11:30	Session IV – Migration
11:30 – 12:45	Lunch (Boardroom)
12:45 – 14:15	Session V – Performance and measurement
14:15 – 14:30	Coffee break (Boardroom Foyer)
14:30 – 16:00	Session VI – Video Analytics
16:00 – 16:15	Coffee break (Boardroom Foyer)
16:15 – 17:15	Session VII - Frameworks

SATURDAY, OCTOBER 14			
HotWeb 2017 (Ballroom III)		SmartIoT 2017 (Ballroom IV)	
07:00 – 08:00	Breakfast (Boardroom)	07:00 – 08:00	Breakfast (Boardroom)
08:50 – 09:00	Opening Remarks	08:50 – 09:00	Opening Remarks
09:00 – 10:00	Keynote: Samee U. Khan	09:00 – 10:00	Keynote: Samee U. Khan
10:00 – 10:30	Coffee break	10:00 - 10:30	Coffee break
10:30 – 12:00	Session I: Web	10:30 - 12:00	Session I: Smart Grid and Smart Home
12:00 – 13:30	Lunch (Boardroom)	12:00 – 13:00	Lunch (Boardroom)
13:30 – 15:00	Session II: Security	13:00 – 14:30	Session II: Edge Computing
15:00 – 15:30	Coffee break	14:30 – 15:00	Coffee break
15:30 – 16:40	Session III: All about Internet	15:00 – 16:30	Session III: IoT Applications

SEC 2017 Technical Program

THURSDAY, OCTOBER 12 (Ballroom II + III + IV)		
07:00 – 08:00	Breakfast (Boardroom)	
08:15 – 08:30	Opening remarks	
08:30 – 09:30	Keynote Speech 1: Mahadev Satyanarayanan (Satya), Carnegie Mellon University Edge Computing: a New Disruptive Force	
09:30 – 10:00	Coffee break (Boardroom Foyer)	
10:00 – 11:30	Session I - Vehicular Edge Computing Session chair: Weisong Shi	
	A Vehicle-based Edge Computing Platform for Transit and Human Mobility Analytics	<i>Bozhao Qi; Lei Kang; Suman Banerjee</i>
	PreDriveID: Pre-Trip Driver Identification from In-Vehicle Data	<i>Gorkem Kar; Shubham Jain; Marco Gruteser; Jinzhu Chen; Fan Bai; Ramesh Govindan</i>
	Real-time Traffic Estimation at Vehicular Edge Nodes	<i>Gorkem Kar; Shubham Jain; Marco Gruteser; Fan Bai; Ramesh Govindan</i>
11:30 – 12:45	Lunch (Boardroom)	
12:45 – 14:15	Session II – Management Session chair: Eric Anderson	
	Gremlin: Scheduling Interactions in Vehicular Computing	<i>Kyungmin Lee; Jason Flinn; Brian D. Noble</i>
	Efficient Placement of Multi-Component Applications in Edge Computing Systems	<i>Tayebah Bahreini; Daniel Grosu</i>
	Workload Management for Dynamic Mobile Device Clusters in Edge Femtoclouds	<i>Karim Habak; Mostafa Ammar; Ellen W. Zegura; Khaled A. Harras</i>
14:15 – 14:30	Coffee break (Boardroom Foyer)	
14:30 – 15:30	Panel: Enabling technologies for Edge Computing Moderate: Shahrokh Daijavad (IBM) Panelists: Lixia Zhang (UCLA), Elisa Bertino (Purdue University), Dharmendra S. Modha (IBM), Victor Bahl (Microsoft), John Kubiatoiwicz (UC Berkeley)	
15:30 – 15:45	Coffee break (Boardroom Foyer)	
15:45 – 17:15	Session III – Applications Session chair: Xiaowen Gong	
	Edge Courier: An Edge-hosted Personal Service for Low-bandwidth Document Synchronization	<i>PengZhan Hao; Yongshu Bai; Xin Zhang; Yifan Zhang</i>
	Towards Efficient Edge Cloud Augmentation for Virtual Reality MMOGS	<i>Wuyang Zhang; Jiachen Chen; Yanyong Zhang; Dipankar Raychaudhuri</i>
	Socially Trusted Collaborative Edge Computing in Ultra Dense Networks	<i>Lixing Chen; Jie Xu</i>
17:15 – 18:30	Poster Session (Ballroom)	
19:00 – 20:00	Banquet (Boardroom)	

FRIDAY, OCTOBER 13 (Ballroom II + III + IV)		
07:00 – 08:00	Breakfast (Boardroom)	
08:30 – 09:30	Keynote Speech 2: Pablo Rodriquez, Telefonica Alpha	
09:30 – 10:00	Coffee break (Boardroom Foyer)	
10:00 – 11:30	Session IV – Migration Session chair: Fred Dougls	
	Fast Transparent Virtual Machine Migration in Distributed Edge Clouds	<i>Lucas Chaufourrier; Prateek Sharma; Franck Le; Erich Nahum; Prashant Shenoy; Don Towsley</i>
	Efficient Service Handoff Across Edge Servers via Docker Container's Migration	<i>Lele Ma; Shanhe Yi; Qun Li</i>
	You Can Teach Elephants to Dance: Agile VM Handoff for Edge Computing	<i>Kiryong Ha; Yoshihisa Abe; Thomas Eiszler; Zhuo Chen; Wenlu Hu; Brandon Amos; Rohit Upadhyaya; Padmanabhan Pillai; Mahadev Satyanarayanan</i>
11:30 – 12:45	Lunch (Boardroom)	
12:45 – 14:15	Session V – Performance and measurement Session Chair: Misha Robinovich	
	Edge Computing in the ePC - A Reality Check	<i>Ilija Hadzic; Yoshihisa Abe; Hans Christian Woithe</i>
	An Empirical Study of Latency in an Emerging Class of Edge Computing Applications	<i>Zhuo Chen; Wenlu hu; Junjue Wang; Siyan Zhao; Brandon Amos; Guanhang Wu; Kiryong Ha; Khalid Elgazzar; Padmanabhan Pillai; Roberta Klatzky; Daniel Siewiorek; Mahadev Satyanarayanan</i>
	LAVEA: Latency-aware Video Analytics on Edge Computing Platform	<i>Shanhe Yi; Zijiang Hao; Qingyang Zhang; Quan Zhang; Weisong Shi; Qun Li</i>
14:15 – 14:30	Coffee break (Boardroom Foyer)	
14:30 – 16:00	Session VI – Video Analytics Session chair: Rolf Schuster	
	ParkMaster: An in-vehicle, edge-based video analytics service for detecting open parking spaces in urban environments	<i>Giulio Grassi; Paramvir Bahl; Kyle Jamieson; Giovanni Pau</i>
	Precog: Prefetching for Image Recognition Applications at the Edge	<i>Utsav Drolia; Katherine Guo; Priya Narasimhan</i>
	ePrivateEye: To the Edge and Beyond!	<i>Christopher Streiffer; Animesh Srivastava; Victor Orlikowski; Nisarg Raval; Ashwin Machanavajjhala; Landon P. Cox; Yesenia Velasco; Vincentius Martin</i>
16:00 – 16:15	Coffee break (Boardroom Foyer)	
16:15 – 17:15	Session VII – Frameworks Session chair: Junshan Zhang	
	An Energy-efficient Offloading Framework with Predictable Temporal Correctness	<i>Zheng Dong; Yuchuan Liu; Husheng Zhou; Xusheng Xiao; Yu Gu; Lingming Zhang; Cong Liu</i>
	CloudPath: A Multi-Tier Cloud Computing Framework	<i>Seyed Hossein Mortazavi; Mohammad Salehe; Carolina Simoes Gomes; Eyal de Lara</i>

Poster papers:

- 1. Embedded Sensor-Data Compression Frameworks for Connected Lighting Systems**
Arvind Ramesh:University of Pennsylvania;Olaitan Olaleye:Philips Lighting Research N.A.;Abhishek Murthy:Philips Lighting Research N.A.
- 2. Combining edge and cloud computing for mobility analytics**
Ikechukwu Maduako:University of New Brunswick;Hung Cao:University of New Brunswick;Lilian Hernandez:University of New Brunswick;Monica Wachowicz:University of New Brunswick
- 3. Container Life Cycle Management for Edge Nodes**
Chih-Peng Wu:Texas A&M University;Mahima Agumbe Suresh:Texas A&M University;Dilma Da Silva:Texas A&M University
- 4. DeServE: Delay-Agnostic Service Offloading in Mobile Edge Clouds**
Amit Samanta:Indian Institute of Technology Kharagpur;YongLi:Tsinghua University
- 5. An Edge-facilitated Message Broker for Scalable Device Discovery**
Zhe Huang:AT&T Labs Research;Bharath Balasubramanian:AT&T Labs Research;Azzam Alsudais:University of Colorado Boulder;Kaustubh Joshi:AT&T Labs Research
- 6. High Speed Object Tracking Using Edge Computing**
Joel Dick:University of Toronto;Caleb Phillips:University of Toronto;Seyed Hosein Mortazavi:University of Toronto;Eyal de Lara:University of Toronto
- 7. Enhancing AMBER Alert using Collaborative Edges**
Qingyang Zhang:Wayne State University;Quan Zhang:Wayne State University;Weisong Shi:Wayne State University;Hong Zhong:Anhui University
- 8. Multi-Stage Stochastic Programming for Service Placement in Edge Computing Systems**
Hossein Badri:Wayne State University;Tayebah Bahreini:Wayne State University;Daniel Grosu:Wayne State University;Kai Yang:Wayne State University
- 9. Edge Datastore for Distributed Vision Analytics**
Yang Deng:University of North Carolina - Charlotte;Arun Ravindran:University of North Carolina - Charlotte;Tao Han:University of North Carolina - Charlotte
- 10. Privacy-preserving of Platoon-based V2V in Collaborative Edge**
Te-Chuan Chiu:National Taiwan University;Junshan Zhang:Arizona State University;Ai-Chun Pang: National Taiwan University

Demo papers:

1. CIRCE _ A runtime scheduler for DAG-based dispersed computing

Aleksandra Knezevic:University of Southern California;Quynh Nguyen:University of Southern California;Jason A. Tran:University of Southern California;Pradipta Ghosh:University of Southern California;Pranav Sakulkar:University of Southern California;Bhaskar Krishnamachari:University of Southern California;Murali Annavaram:University of Southern California

2. A Novel Architecture for Real-Time Ultra Low-Power End-to-End Object Detection and Tracking on the Edge

Hamed Tabkhi:University of North Carolina at Charlotte

3. Fast and Accurate Object Analysis at the Edge for Mobile Augmented Reality

Qiang Liu:University of North Carolina - Charlotte;Siqi Huang:University of North Carolina - Charlotte;Tao Han:University of North Carolina - Charlotte

4. Establishing a BLE Mesh Network with Fabricated CSRmesh Devices

Xiaokun Yang:University of Houston, Clear Lake;Xianlong He:Ether Electronics Co., Ltd

5. A Smart Building System Integrated with An Edge Computing Algorithm and IoT Mesh Networks

Archit Gajjar:University of Houston Clear Lake;Xiaokun Yang:University of Houston Clear Lake

HotWeb 2017 Program

SATURDAY, OCTOBER 14 (Ballroom III)	
07:00 – 08:00	Breakfast (Boardroom)
08:50 - 09:00	Opening Remarks
09:00 - 10:00	Keynote I: Internet, Things, and Smartness Speaker: Samee U. Khan (NSF & North Dakota State University) Session Chair: Xiuzhen Cheng
10:00 - 10:30	Coffee break
10:30 - 12:00	Technical Session 1: Web
	Precog: Action-Based Time-Shifted Prefetching for Web Applications on Mobile Devices <i>Shruti Sanadhya: Hewlett Packard Labs, Palo Alto, CA; Uma Parthavi Moravapalle: Georgia Institute of Technology, Atlanta, GA; Kyu-Han Kim: Hewlett Packard Labs, Palo Alto, CA; Raghupathy Sivakumar: Georgia Institute of Technology, Atlanta, GA</i>
	An Empirical Study of Financial Incentivized Question Answering in Social Websites <i>Huangxin Wang: George Mason University; Zhonghua Xi: George Mason University; Jean X. Zhang: Virginia Commonwealth University; Fei Li: George Mason University</i>
	Automated Least Privileges in Cloud-Based Web Services <i>Matthew Sanders: Colorado School of Mines; Chuan Yue: Colorado School of Mines</i>
	Extracting Web Information using Representation Patterns <i>Juan C. Roldán: University of Sevilla; Patricia Jiménez: University of Sevilla; Rafael Corchuelo: University of Sevilla</i>
	NoCDN: Scalable Content Delivery Without a Middleman <i>Junbo Xu: Case Western Reserve University; Michael Rabinovich: Case Western Reserve University</i>
12:00 - 13:30	Lunch (Boardroom)
13:30 - 15:00	Technical Session 2: Security
	Rethinking Information Sharing for Threat Intelligence <i>Aziz Mohaisen: University of Central Florida; Omar Al-Ibrahim: University of Central Florida; Charles Kamhoua: US Army Research Laboratory; Kevin Kwiat: Air Force Research Laboratory; Laurent L. Njilla: Air Force Research Laboratory</i>

	<p>Graphical passwords for older computer users <i>Nancy Carter:College of William & Mary; Ed Novak:Franklin & Marshall College; Cheng Li:College of William & Mary; Zhengrui Qin:Northwest Missouri State University; Qun Li:College of William & Mary; Jennifer A Stevens:College of William & Mary; Jiquo Yu:Qufu Normal University</i></p>
	<p>Mitigating DNS Random Subdomain DDoS Attacks by Efficient Distinct Heavy Hitters <i>Yehuda Afek:Tel-Aviv University, Israel; Anat Bremler-Barr:Interdisciplinary Center, Israel; Edith Cohen:Google Research and Tel-Aviv University; Shir Landau Feibish:Tel-Aviv University; Michal Shagam:Tel-Aviv University</i></p>
	<p>Understanding the Effectiveness of Typosquatting Techniques <i>Jeffrey Spaulding:University of Central Florida; DaeHun Nyang:Inha University; Aziz Mohaisen:University of Central Florida</i></p>
	<p>Inference attacks based on neural networks in social networks <i>Bo Mei:The George Washington University; Yinhao Xiao:The George Washington University; Hong Li:Chinese Academy of Sciences; Xiuzhen Cheng:The George Washington University; Yunchuan Sun:Beijing Normal University</i></p>
15:00 - 15:30	Coffee break
15:30 - 16:40	Technical Session 3: All about Internet
	<p>Edge Computing Enabled Smart Firefighting: Opportunities and Challenges <i>Xiaopei Wu: Wayne State University; Qingyang Zhang: Anhui University, Wayne State University; Weisong Shi: Wayne State University;</i></p>
	<p>Graph-Pubsub: An Efficient Publish/Subscribe Architecture with Graph-Based Information Relationships <i>Jiachen Chen:WINLAB, Rutgers University; Haoyuan Xu:WINLAB, Rutgers University; Yanyong Zhang:WINLAB Rutgers University; Dipankar Raychaudhuri:WINLAB Rutgers University</i></p>
	<p>A Knowledge and Reasoning Toolkit for Cognitive Applications <i>Mustafa Canim:IBM Research; Cristina Cornelio:IBM Research; Robert Farrell:IBM Research; Achille Fokoue:IBM Research; Kyle Gao:IBM Research; John Gunnels:IBM Research; Arun Iyengar:IBM Research; Ryan Musa:IBM Research; Mariano Rodriguez-Muro:IBM Research</i></p>
	<p>Enabling Distributed Revision Control Systems in Delay-Tolerant <i>Philipp Hagemester:Heinrich-Heine Universität Düsseldorf; Martin Mauve:Heinrich-Heine Universität Düsseldorf</i></p>

SmartIoT 2017 Program

SATURDAY, OCTOBER 14 (Ballroom IV)	
07:00 – 08:00	Breakfast (Boardroom)
08:50 - 09:00	Opening Remarks – Chonggang Wang
09:00 - 10:00	Keynote I: Internet, Things, and Smartness Speaker: Samee U. Khan (NSF & North Dakota State University) Session Chair: Xiuzhen Cheng
10:00 - 10:30	Coffee break
10:30 - 12:00	Technical Session 1: Smart Grid and Smart Home Session Chair: Chonggang Wang
	Optimization for Charge Station Placement in Electric Vehicles Energy Network <i>Yu Sui (Shanghai Jiao Tong University), Ping Yi (Shanghai Jiao Tong University), Xin Liu (University of Maryland), Wei Wang (University of Maryland), Ting Zhu (University of Maryland).</i>
	Short term Load Forecasting based on Wavelet Decomposition and Random Forest <i>Qingping Huang (North China Electric Power University), Yujiao Li (North China Electric Power University), Song Liu (North China Electric Power University), Peng Liu (North China Electric Power University).</i>
	A Novel Fault Diagnostic Technique for Photovoltaic Systems Based on Cascaded Forest <i>Liangqing Hu (Guangxi University), Jin Ye (Guangxi University), Shengqiang Chang (Shijiazhuang Kelin Electric Co.), Hongtao Li (Guangxi University), Hongyu Chen (Shijiazhuang Kelin Electric Co.).</i>
	Lessons and Experiences of a DIY Smart Home <i>Raef Abdallah (Wayne State University), Lanyu Xu (Wayne State University), Weisong Shi (Wayne State University).</i>
12:00 - 13:00	Lunch (Boardroom)
13:00 - 14:30	Technical Session 2: Edge Computing Session Chair: Qun Li
	Meet-Fog for Accurate Distribution of Negative Messages in VANET <i>Baohua Huang (Guangxi University), Xiaolu Cheng (Virginia Commonwealth University), Wei Cheng (Virginia Commonwealth University).</i>

	<p>Video Usefulness and Its Application in Large-Scale Video Surveillance Systems: An Early Experience <i>Hui Sun (Anhui University), Xu Liang (Anhui University), Weisong Shi (Wayne State University)..</i></p> <p>Elastic Urban Video Surveillance System Using Edge Computing <i>Jianyu Wang (University of Missouri - St. Louis), Jianli Pan (University of Missouri - St. Louis), Flavio Esposito (Saint Louis University).</i></p> <p>Domain Specific Compiler for Coordinated Signal Processing in 5G testbed <i>Han Li (Tongji University), Haoqi Ren (Tongji University), Jun Wu (Tongji University).</i></p>
14:30 - 15:00	Coffee break
15:00 - 16:30	<p>Technical Session 3: IoT Applications Session Chair: Wei Cheng</p>
	<p>Smart Phone based Phubbing Walking Detection and Safety Warning <i>Wenwen Du (University of Science and Technology of China), Kai Xing (University of Science and Technology of China), Haihua Gong (University of Science and Technology of China).</i></p> <p>The Φ-Stack for Smart Web of Things <i>Zhiwei Xu (Chinese Academy of Sciences), Xiaohui Peng (Chinese Academy of Sciences), Lei Zhang (Chinese Academy of Sciences), Dong Li (Chinese Academy of Sciences), Ninghui Sun (Chinese Academy of Sciences).</i></p> <p>Mining and Analysis of Public Information for Insight into Personal Fitness Tracker Reliability, Operations and User Performance <i>Nancy Carter (College of William and Mary), Qun Li (College of William and Mary), Jiquo Yu (Qufu Normal University).</i></p> <p>Can Quantitative Finance benefit from IoT? <i>Peng Zhang (Stony Brook University), Xiang Shi (Advanced Risk and Portfolio Management), Samee U. Khan (North Dakota State University).</i></p>
16:30 - 16:40	Closing Remarks – Chonggang Wang