

# **2017 IEEE International Conference on Pervasive Computing and Communications (PerCom 2017)**

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# Technical Program

Tuesday, March 14

**Tuesday, March 14, 08:30 - 08:45**

## Opening Remarks

Remarks by the Steering Committee Chair, Co-General Chair and the Program Committee Chair

Room: Keauhou I

Chairs: Claudio Bettini (University of Milan, Italy), Matt Mutka (Michigan State University, USA)

**Tuesday, March 14, 08:45 - 09:45**

## Keynote: Smarter Pervasive Computing

Room: Keauhou I

Chair: Matt Mutka (Michigan State University, USA)

The pervasive computing discipline has evolved substantially since its inception. A lot of progress has been made in scaling pervasive computing, which has led to new, societal-scale capabilities such as mobile crowdsensing and the Internet of Things. Pervasive computing applications have also expanded from smart appliances and smart environments in the early days to systems of much broader scope such as smart cities and smart transportation. Going forward, an important direction is to enable a significantly heightened level of smartness in pervasive computing systems, by leveraging developments in big data and cognitive computing. Specifically, with its exponentially increasing volume, velocity and variety, big data is hailed as the world's new natural resource, and is driving fundamental changes in technology, business, and society. The biggest value of big data lies in the deep, actionable insights that can be derived from integrating all sources and modalities of data, across pervasive sensors and enterprise information systems. Such insights can then be exploited for business innovations and competitive advantages. Cognitive computing is a key enabling technology for turning big data into insights. Different from traditional programmable systems, cognitive systems are able to understand human knowledge, reason with a purpose, and learn and improve over time. Pervasive applications that integrate big data across the board and are cognitive are thus more insightful and can offer an unprecedented level of intelligence. In this talk, I will discuss the implications of big data and cognitive computing on pervasive computing. I will draw upon our experience at IBM Watson Health, and discuss how big data and cognitive computing can come together with pervasive computing to enable innovative health solutions that address many clinical, societal, and economic issues. I will present use cases, highlight the challenges, describe our approaches, and relate to client experiences.

### ***Smarter Pervasive Computing.....1***

Hui Lei (IBM)

**Tuesday, March 14, 09:45 - 10:15**

## Break

Room: Foyer

**Tuesday, March 14, 10:15 - 12:00**

## Paper Session: Smart Smartphones

Room: Keauhou I

Chair: Petteri Nurmi (Helsinki Institute for Information Technology HIIT, Finland)

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## **Tuesday, March 14, 12:00 - 13:00**

### **Lunch**

Room: Rays on the Bay Restaurant

## **Tuesday, March 14, 13:00 - 13:15**

### **PhD Forum Teaser Madness**

Room: Keauhou I

Chair: Daniela Nicklas (University of Bamberg & Faculty Information Systems and Applied Computer Science, Germany)

## **Tuesday, March 14, 13:15 - 14:30**

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Room: Keauhou I

Chair: Qi Han (Colorado School of Mines, USA)

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## **Tuesday, March 14, 14:30 - 15:00**

### **Break**

Room: Foyer

**Tuesday, March 14, 15:00 - 15:50**

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Room: Keauhou I

Chair: Delphine Reinhardt (University of Bonn and Fraunhofer FKIE, Germany)

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**Tuesday, March 14, 15:50 - 16:30**

**WiP and Demo Teaser Madness**

Introduction to Work in Progress, Demonstrations and PhD Forum Contributions

Room: Keauhou I

Chairs: Petteri Nurmi (Helsinki Institute for Information Technology HIIT, Finland), Gregor Schiele (University of Duisburg-Essen, Germany)

**Tuesday, March 14, 16:30 - 19:00**

**Work in Progress, Demonstrations, PhD Posters during Reception**

Room: Keauhou II

Chairs: George Roussos (Birkbeck College, University of London, United Kingdom), Guoliang Xing (Michigan State University, USA), Gang Zhou (College of William and Mary, USA)

**Wednesday, March 15**

**Wednesday, March 15, 08:30 - 08:45**

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Room: Keauhou I

Chair: Claudio Bettini (University of Milan, Italy)

**Wednesday, March 15, 08:45 - 09:45**

**Keynote: Curious True Facts About People and Location**

Room: Keauhou I

Chair: Claudio Bettini (University of Milan, Italy)

We are all people who have a definite location, but our intuitions about people and their locations are not always correct. Fortunately, researchers have been looking at how people behave with respect to location, and they have discovered surprising facts that do not necessarily match our assumptions. For example, as technologists, we tend to assume that people have strong concerns about their location privacy. But is this really true? As another example, researchers have tried to show that the same models of location

behavior apply to both people and animals. Does this survive scrutiny? And if people exhibit complex behavior in terms of location, does this mean it is difficult to predict where they will go in the future? Not necessarily. The last few decades have seen principled answers to these and other questions, with research driven by growing demand for mobile computing, increasing availability of location data, and expanding problems in transportation. In this talk I will present several ways that our intuition about people and location does not match reality.

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John C. Krumm (Microsoft Research, USA)

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Room: Rays on the Bay Restaurant

**Wednesday, March 15, 13:00 - 14:30**

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### Break

Room: Foyer

## Wednesday, March 15, 15:00 - 16:30

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### Banquet

Awards: Best Paper, Best Demo, Best WiP Poster

Room: Hawaii Lawn

Thursday, March 16

**Thursday, March 16, 08:30 - 10:15**

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University, Taiwan); Kai-Lung Hua (National Taiwan University of Science and Technology, Taiwan)

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**Break**

Room: Foyer

**Thursday, March 16, 10:45 - 12:00**

**Panel: Pervasive Computing in the New Era of AI**

Room: Keauhou I

Chair: Jiannong Cao (Hong Kong Polytechnic Univ, Hong Kong)

**Thursday, March 16, 12:00 - 13:15**

**Lunch**

Room: Rays on the Bay Restaurant

**Thursday, March 16, 13:15 - 14:45**

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### Break

Room: Foyer

## Thursday, March 16, 15:15 - 16:45

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## Thursday, March 16, 16:45 - 17:30

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Room: Keauhou I

Chair: Mohan J Kumar (Rochester Institute of Technology, USA)