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SmartCloud 2017

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Symposium and Tutorial Sessions

SmartCloud 2017 also hosts or co-locates with a few academic events.

Workshop on Privacy Analytics and Protection of Smart Data (PAPSD 2017)

With the fast development of cloud computing, social networks, Internet of Things, and mobile applications, privacy preserving as an integral part of cybersecurity has never been more challenging than today. This workshop will focus on privacy protection research on smart data collection, storage, data sharing, and analytical techniques. It aims to provide a venue for researchers to present the latest findings, cross-fertilize in these fields, and improve practical applications. Furthermore, submissions on industry experience and educational topics and systems in the field of privacy protection are also encouraged. [\[Call for Papers\]](#)

Topics of particular interest include, but are not limited to:

- Privacy in new paradigms of smart data
- Privacy in healthcare data
- Privacy in cloud-based data
- Privacy in online social networks
- Privacy in routing and networking
- Privacy in Internet of Things
- Privacy in smart power grids
- Location privacy
- Surveillance privacy
- Data anonymization and statistical privacy
- Privacy preserving data mining
- Private information retrieval

Paper Submission Guidelines:

Papers should be within 6 pages in length total and use the IEEE Computer Society template. All submissions must describe original research, not published nor currently under review for other workshops, conferences, or journals. Submission implies the willingness of at least one author to attend the workshop and present the paper. Selected best papers will be recommended to the EI indexed journals, International Journal of Parallel, Emergent and Distributed Systems (IJPEDS), Special Issue on Smart Computing and Communication, and International Journal of High Performance Computing and Networking (IJHPCN). All papers must be submitted electronically via the EasyChair system.

For more information, please contact: Yan Bai at yanb@uw.edu and Lin Li at lilin@pvamu.edu.

IEEE International Symposium on Smart Fog (SmartFog 2017)

The rapid development of cloud computing combining with Internet-of-Things (IoT) has dramatically increased the power the network in the industry. However, a pure cloud computing cannot satisfy the computing demand in big data due to the large-sized data transfers. Fog/edge computing is considered an alternative solution to the problem of big data communications by adding a new server layer and fully utilizing edge devices. This symposium aims to collect recent quality research achievements in the field of fog/edge computing and provide scholars with a platform for sharing their studies, investigations, and research.

Topics of particular interest include, but are not limited to:

- Novel fog/edge framework, architecture, implementation
- Resource management in fog/edge computing
- Security and privacy in fog/edge computing
- Optimization techniques in fog/edge computing
- Intelligent agents deployment in fog/edge computing
- Artificial intelligence applications in fog/edge computing
- 5G communication architecture and protocols for fog/edge paradigm
- Social IoT in fog/edge computing
- Simulation and emulation platform for fog/edge computing
- Algorithms and techniques for computation offloading in fog/edge computing

Paper Submission Guidelines:

Papers should be within 6 pages in length total and use the IEEE Computer Society template. All submissions must describe original research, not published nor currently under review for other workshops, conferences, or journals. Submission implies the willingness of at least one author to attend the workshop and present the paper. Selected best papers will be recommended to the EI indexed journals. For more information, please contact Symposium Chair: Keke Gai at kekegai@smart-com.org.

Tutorial Session: Data Privacy Preservation in Cloud through Machine Learning

Presenter: Dr. Mehdi Bahrami, Fujitsu Laboratory of America (FLA), Sunnyvale, CA
Time: 10AM-12AM, November 5th, 2017, Room A



Dr. Mehdi Bahrami
Fujitsu Laboratory of
America (FLA)
Sunnyvale, CA

Bio: Mehdi Bahrami is a Member of Research Staff at Fujitsu Laboratory of America in Sunnyvale, California. He received his Ph.D. in Electrical Engineering and Computer Science from the University of California, Merced, where his Ph.D. dissertation focuses on a dynamic cloud and data privacy preservation. He is an IEEE Senior member and he has more than 10 years of software industry experience in the field of computer science. He has published several technical papers in the areas of cloud computing and data privacy. He is an editor, reviewer for several international computer science journals, including Springer journals. He also served as a technical program committee member for several international IEEE computer science conferences. He is served as a featured speaker in several international conferences. He has extensive experience with software engineering and developing distributed software applications in diverse platforms. He is a recipient of 2017 Special President Award from Fujitsu Laboratories, Best Demo Award at 2016 ACM ICN, 2015 Distinguished Leadership Award from Margo F. Souza Leadership Center, 2015 Margo Souza Entrepreneur in Training Award, an Achievement Award from 2015 IEEE MobileCloud, and several fellowship awards during his Ph.D. study at UC Merced. URL: <http://cloudlab.ucmerced.edu/~mehdi-bahrami>

Topic: Data Privacy Preservation in Cloud through Machine Learning

Abstract: The emerging field of Cloud Computing provides elastic on-demand services over the Internet or over a network. According to the International Data Corporation (IDC) users' data privacy is one of the key challenges in the cloud environment. Users' data privacy can be violated by the cloud vendor, the vendor's authorized users, other cloud users, unauthorized users, or external malicious entities. Encryption of data on client side is one of the solutions to preserve data privacy in the cloud; however, encryption methods are complex and expensive for mobile devices, such as smart phones to encrypt and decrypt each single file. Therefore, we should consider a variety of data security and data privacy solutions for each challenge. In this tutorial, we review different data privacy challenges as well as the state-of-the-art from both academia and industry to define different possible data security and data privacy solutions for each challenge. We provide a set of use cases to understand the challenges for different users. We also focus on different machine learning algorithms in order to preserve users' data privacy when different trained models enable users to monitor users data privacy and data security.

The tutorial addresses diverse audience including: cloud providers, cloud DevOps, engineers and cloud end-users by recommending a set of solutions from different perspectives to overcome each data privacy challenge. This tutorial composes of lecture, discussion session, short-demo sessions, and Q&A. We provide a digital handout with some online resource

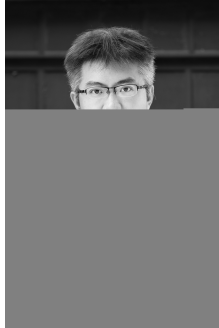
that allows audience to interactively participate in the tutorial. The background of this tutorial is available [here](#).

[\[PDF\]](#)

Tutorial Session: An Overview of Reinforcement Learning Theory and Its Applications

Presenter: Dr. Chong Li, Department of Qualcomm Technologies, Corporate R&D Inc.

Time: 10AM-12AM, November 5th, 2017, Room B



Dr. Chong Li
Department of Qualcomm
Technologies,
Corporate R&D Inc.

Bio: Chong Li is staff engineer at Corporate R&D Department of Qualcomm Technologies, Inc. and adjunct professor at Columbia University. He received Bachelor degree in Electronic Engineering and Information Science from Harbin Institute of Technology in 2008 and Ph.D degree in Electrical and Computer Engineering from Iowa State University in 2013. He has served as session chair and technical program committee for international conferences and also served as reviewer for prestigious journals and conferences in the field. He received MediaTek Inc. & Wu Ta You Scholar Award in 2007, Rosenfeld International Scholarship and Research Excellent Award in 2012 and 2013, respectively. His research interest includes information theory, machine learning, networked control and communications, coding theory and its applications on vehicular network, PHY/MAC design for 5G technology and beyond. Dr. Li holds 80+ international and U.S. patents (granted & filed).

Topic: Data Privacy Preservation in Cloud through Machine Learning

Abstract: In this talk, I will go over the reinforcement learning (RL) from problem formulation, elementary solutions to advanced topics. The overview will cover model-based RL learning, model-free RL learning (e.g. Monte Carlo, temporal difference, Q-learning), eligibility traces, function approximation, and deep reinforcement learning.

IEEE International Symposium on Reinforcement Learning (ISRL 2017)

Artificial intelligence has been dramatically changing people's life. As one of the significant intelligent techniques, reinforcement learning (RL) is a controllable and understandable approach to drive people's life smarter. The core of this techniques uses dynamic programming, which is inspired by behaviourist psychology. The development of reinforcement learning also has a great impact on the deployment of cloud computing and other disciplines in smart computing. This symposium aims to provide researchers with a forum that collects recent achievements in this field.

Topics of particular interest include, but are not limited to:

- Multi-agent adaptive dynamic programming for high performance cloud services
- Hierarchical reinforcement learning
- Reinforcement learning in Security and privacy
- Data-driven reinforcement learning and control mechanism
- Network-based reinforcement learning mechanism
- New paradigm of reinforcement learning
- Software and application of reinforcement learning
- Theoretical improvements for reinforcement learning
- Simulation and emulation platform for reinforcement learning
- Large-scale reinforcement learning
- Deep reinforcement learning

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