

Title:

Holistic Technologies for Managing Internet-of-Things and Cloud Services

Abstract:

Introduction of cloud computing has changed the users' vision of the computing world. Cloud computing concerns large-scale interconnected systems and it has the main purpose to aggregate and to efficiently exploit the power of widely distributed resources. Resource Management and Scheduling is one of the most important and challenging aspects of cloud computing as it involves complex optimization problems in a typically dynamic environment. On top of such robust systems, new methods are to be invented to create a secured fault tolerant, reliable cloud system which is efficient and more available. On the other hand, Internet of Things (IoT) service systems are aimed at monitoring and controlling the behavior of the physical world using a vast interlinked network of devices such as sensors, gateways, switches, routers, computing resources, applications/services, and also humans in order to link the digital world with the physical. IoT service systems drive the vision of a smart interconnected digital-physical world where interactions among different components can be handled in a proper way. The challenges of IoT service systems are also significant, such as fast growth of the scale, deep complexity of data sensing and processing, intense system monitoring in real time, and efficient and effective management for IoT-based service systems (smart grid, smart healthcare, industry4.0, fog/edge). To address the above challenges, novel technologies including high performance control methods, efficient detection and protection for IoT security and cross layer technologies for IoT service systems, have to be investigated.

The objective of the workshop is to explore new directions and avenues of analytical and experimental methods for efficient resource management in cloud environments. This workshop encourages submission of ongoing work, as well as position papers and case studies of existing verification projects. The workshop attempts to combine high-quality contributed papers revealing the latest topics in research in this domain and exciting applications and services from renowned industry houses.

Scope and Topics:

The topics to be covered include but are not limited to:

- ✧ Monitoring and maintenance in cloud computing environments
- ✧ Performance optimization, service level agreements
- ✧ Innovative applications and experiences in cloud computing for Emerging Markets
- ✧ IoT innovative protocols and standardization attempts

- ✧ IoT monitoring and reconfiguration
- ✧ Advances in virtualization of software services
- ✧ Cloud composition, orchestration, federation
- ✧ Cloud workload profiling and deployment control
- ✧ Optimizations for heterogeneous IoT service computing systems
- ✧ Energy aware IoT service computing systems
- ✧ Scalable algorithms for monitoring performance
- ✧ Models and techniques for automatically prediction
- ✧ Real time operations of distributed IoT service computing systems
- ✧ Performance benchmarking and profiling use cases

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Kun-Ming Yu received the B.S. degree from National Taiwan University in 1981, and the M.S. and Ph.D. degree in Computer Science from the University of Texas at Dallas, in 1988 and 1991, respectively. From 1996 to 2000, he was the chair of the Department of Computer Science and Information Engineering, Chung-Hua University. From 2006 to 2017, he was the Dean of College of Computer Science and Informatics, Chung-Hua University. He currently serves as Vice President of Chung-Hua University. His research interests include cloud computing, distributed and parallel computing, IoT, Ad Hoc Network, and computer algorithms.

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Ching-Hsien Hsu is a Distinguished Professor in the department of computer science and information engineering at Chung Hua University, Taiwan. His research includes high performance computing, cloud computing, parallel and distributed systems, big data analytics, ubiquitous/pervasive computing and intelligence. He has published 200 papers in top journals such as IEEE TPDS, IEEE TSC, ACM TOMM, IEEE TCC, IEEE TETC, IEEE System, top conference proceedings, and book chapters in these areas. Dr. Hsu is the editor-in-chief of International Journal of Grid and High Performance Computing, and International Journal of Big Data Intelligence; and serving as editorial board for a number of prestigious journals, including IEEE Transactions on Service Computing, IEEE Transactions on Cloud Computing. He is Vice Chair of IEEE Technical Committee on Cloud Computing.

Program Committee:

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