

UNIVERSITY OF MACAU
FACULTY OF SCIENCE AND TECHNOLOGY

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***“Towards Agent-based Cloud Computing
and Cloud Search Engine”***

by

Prof. Ben Kwang Mong SIM

*Associate Editor, IEEE Transactions on Systems, Man &
Cybernetics (IEEE Press)*

*Associate Editor, International Journal of Cloud Computing
(Inderscience)*

*Director, Multiagent & Cloud Computing Systems Laboratory
Gwangju Institute of Science & Technology, South Korea*

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Venue: HG01

ABSTRACT

This seminar presents the materials adapted from my keynote lecture at the International Conference on Cloud Computing and Virtualization (CCV2010), held in May 2010 in Singapore. Whereas much of the current work on Cloud computing focuses on the construction of Cloud infrastructures and technologies for supporting virtualization, little attention has been devoted to devising methods for consumers to discover, request, and use Cloud resources. Autonomous agents and multiagent systems are appropriate tools for mediating user access, and automating the discovery, aggregation, negotiation, and harnessing of Cloud resources. Agent-based Cloud computing is concerned with the design and development of software agents for bolstering Cloud service discovery, service negotiation, and service composition. Whereas the service discovery phase consists of searching for appropriate Cloud services that match consumers' requirements, the negotiation phase consists of message exchange and establishment of service level agreements (*SLAs*) between consumers and brokers, and between each broker and multiple providers. However, state-of-the-art approaches in Cloud computing provide limited support for Cloud service discovery and dynamic *SLA* negotiations. This seminar introduces some of the on-going work at the Multiagent and Cloud Computing Systems Laboratory, Gwangju Institute of Science and Technology, in designing and developing 1) Cloudle: an ontology-enhanced Cloud search engine and 2) Cloud negotiation agents.

BIOGRAPHY

Benjamin Kwang-Mong Sim has extensive experience serving as Editor and Guest Editor of many international journals. He has been an Associate Editor of the IEEE Transactions on Systems, Man, and Cybernetics, Part C since 2003. In addition, he serves as an Editorial Board Member of the International Journal of Cloud Computing (InderScience) and many other international journals. He is the sole Guest Editor/Lead Guest Editor of five special journal issues, including a special issue on Grid resource management (IEEE Systems Journal) and a special issue on game-theoretic analysis and stochastic simulation of negotiation agents

(IEEE Transactions on SMC).

He has delivered numerous keynote lectures on agent-based Cloud computing and automated negotiation at international conferences. He founded the Multiagent and Cloud Computing Systems Laboratory at the Gwangju Institute of Science and Technology, South Korea. In addition to attracting many national highly competitive research grants in South Korea, Hong Kong, and Taiwan, he has contributed many survey papers (including frequently-cited survey papers in IEEE Transactions). He publishes regularly in top journals (e.g., IEEE Transactions on SMC, IEEE Transactions on Evolutionary Computation, Computational Intelligence Journal, and Journal of autonomous agent and multiagent systems) and top conferences (e.g., International Conference on autonomous agent and multiagent systems and IEEE International Conference on Cloud Computing Technology and Science).

He is a referee for many national research grant councils, including the National Science Foundation, USA, and has served as an external tenure and promotion reviewer for a preeminent research university in USA and a PhD thesis examiner for universities in Canada and Australia. He is a referee for Routledge Economics Book Series on Game Theory, Taylor & Francis, UK. He is also a senior member of IEEE, the IEEE SMC Society, the IEEE CI Society, a TC Member of both the IEEE SMC Society's Technical Committee on Distributed Intelligent Systems and the IEEE SMC Society's Technical Committee on Conflict Resolution, and a Professional Lifetime Member of ACM.

ALL ARE WELCOME!

