Keynote Speech 1:

Parallel Computing on Clouds - Issues and Solutions

Yi Pan
Distinguished University Professor and Associate Dean
Department of Computer Science, Georgia State University
Atlanta, Georgia, USA

Abstract
Cloud computing has emerged rapidly as a growing paradigm of on-demand access to computing, data and software utilities using a usage-based billing model. Users essentially rent resources and pay for what they use and everything including software, platform, and infrastructure is as a service. Many massive data applications including data mining should be the ideal applications on cloud platforms. However, with the current cloud programming models, complicated data mining algorithms cannot be implemented easily and executed efficiently on the many cloud platforms. In this talk, I will give a review of different massively parallel computing platforms and compare various computing domains and programming models on these platforms, their limitations and potential solutions, especially to data mining applications. In particular, I will point out the shortcomings and limitations of current cloud computing programming models for typical data mining algorithms, and propose possible solutions. Current MapReduce model and its variants have succeeded in data-parallel applications such as database operations and web searching; however, they are still not effective for applications with a lot of data dependency such as data mining and graph applications. We propose several approaches to solving this problem through extension of current programming models, automatic translation from sequential codes to cloud codes, simple API and framework built on current cloud models, detection of data and task parallelism, and their efficient scheduling. Some preliminary theoretical and experimental results will also be reported in this talk.

Short Biography
Yi Pan is a Distinguished University Professor of the Department of Computer Science and an Interim Associate Dean at Georgia State University, USA. Dr. Pan received his B.Eng. and M.Eng. degrees in computer engineering from Tsinghua University, China, in 1982 and 1984, respectively, and his Ph.D. degree in computer science from the University of Pittsburgh, USA, in 1991. His profile has been featured as a distinguished alumnus in both Tsinghua Alumni Newsletter and University of Pittsburgh CS Alumni Newsletter. Dr. Pan's research interests include parallel and cloud computing, wireless networks, and bioinformatics. Dr. Pan has published more than 150 journal papers with over 50 papers.
published in various IEEE journals. In addition, he has published over 150 papers in refereed conferences. He has also co-authored/co-edited 37 books. His work has been cited more than 4000 times. Dr. Pan has served as an editor-in-chief or editorial board member for 15 journals including 7 IEEE Transactions. He is the recipient of many awards including IEEE Transactions Best Paper Award, IBM Faculty Award, JSPS Senior Invitation Fellowship, IEEE BIBE Outstanding Achievement Award, NSF Research Opportunity Award, and AFOSR Summer Faculty Research Fellowship. He has organized many international conferences and delivered over 40 keynote speeches at various international conferences around the world.
Keynote Speech 2:

Personal Big Data Analytics and Individualized Sustainable Utilization in Ubiquitous Cloud Environments

Qun Jin
Professor
Department of Human Informatics and Cognitive Sciences
Faculty of Human Sciences, Waseda University, Japan

Abstract

With the rapid development of ubiquitous cloud computing technology, especially mobile Internet, smartphone and wireless sensor technology in recent years, not only individual information access but also information behavior in both work and private lives can be captured and recorded at any place and anytime. Accumulated data and information relevant to a specific individual is generally called life log. Life log is a kind of personal data. Long-term or even lifelong accumulating of life log for an individual becomes big data, or personal big data. Big data like life log is obviously of big potential value for an individual, business, regional or even national strategic planning as well. In this talk, after briefly introducing our vision on individualized sustainable use of personal big data in pursuit of timeless value, personal data analytics, a unified approach to analyzing of personal big data and individual modeling empowered by ubiquitous cloud computing technology, will be described and discussed. In addition, our work on the prototype system design, implementation and application will be shown and explained.

Short Biography

Qun Jin is a tenured full professor in the Networked Information Systems Laboratory, Department of Human Informatics and Cognitive Sciences, Faculty of Human Sciences, Waseda University, Japan. He has been engaged extensively in research works in the fields of computer science, information systems, and social and human informatics. He seeks to exploit the rich interdependence between theory and practice in his work with interdisciplinary and integrated approaches. His recent research interests cover human-centric ubiquitous computing, human-computer interaction, behavior and cognitive informatics, big data, personal analytics and individual modeling, MOOCs and learning analytics, and computing for well-being. He is a member of IEEE, IEEE CS and ACM, USA, IEICE, IPSJ and JSAI, Japan, and CCF, China. Contact him at jin@waseda.jp.
Keynote Speech 3:

Research on Large-scale RFID Application Problems

Keqiu Li
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School of Computer Science and Technology
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Abstract

Owing to its attractive features including remote accesses, non-line-of-sight reading, computational ability, and relatively large rewritable memory over the conventional barcode systems, Radio-Frequency Identification (RFID) technology has a great promising prospect in many application scenarios such as localization, supply chain management, and inventory control. However, we are facing some challenges in large-scale RFID systems. For example, the serious tag signal collision because of self-determined communication strategy; the restricted battery power of active RFID tags due to its small shape, the long execution delay due to large tag cardinality. These challenging issues are obstacles on the way to widespread utilization of RFID technology. In this talk, we first review the existing typical work in research community. Then, we will introduce our work in this area. We focused on and studied some practically important RFID application problems, e.g., missing tag identification, unknown tag detection/identification, key tag counting, RFID estimation with blocker tags, etc. Finally, we will discuss the possible integration of RFID technology with cloud computing or datacenter.

Short Biography

Keqiu Li is currently a full professor at the School of Computer Science and Technology, Dalian University of Technology, China. He got his bachelor and master degree both from Dalian University of Technology, China in 1994 and 1997, and his doctor degree from Japan Advanced Institute of Science and Technology, Japan in 2005. Keqiu Li was a research fellow at the University of Tokyo, Japan from Oct. 2005 to Sep. 2007. He had also five-year experience in industry. Keqiu Li’s research interests include content distribution network, cloud computing, data center network, and wireless computing. Keqiu Li has published more than 100 technical papers in international journals and conferences, such as TPDS, TKDE, TOIT, TOMAPP, INFOCOM, ICNP, etc. He is on the committee board for several international/national journals including IEEE TPDS and IEEE TC, and serves as organization chair/publication chair/program committee member for a couple of international conferences. Keqiu Li is a senior member of IEEE and CCF, and a member of ACM.
Keynote Speech 4:

Cloud Computing Ecosystem Trend & Hybrid Cloud in the Industry

Armstrong Ying
Chief Cloud Advisor
Cloud Computing, Sales and Distribution, IBM Greater China Group
IBM Corporation

Abstract

Cloud computing business models are shifting from product or service based business models to an ecosystem business model. Today, a few cloud ecosystems like Amazon AWS ecosystem, OpenStack ecosystem have emerged, and the primary competition is about ecosystem dominance. The current cloud landscape can’t easily be understood if we don’t take a holistic view on the ecosystem competition. This session will walk you through some of the recent trends and innovations in the ecosystem. IBM’s point of views and strategy on hybrid cloud will be illustrated, as well as the enterprise cloud adoption patterns that we observed in the China market. Following some of the key enterprise requirements, we will briefly discuss the facts and challenges, some of the pilot experiments with enterprises, technical roadmaps and finally wrap up the discussion with an example of hybrid cloud architecture overview for enterprise.

Short Biography

Armstrong Ying is currently chief cloud computing advisor for IBM GCG(Greater China Group) sales & distribution, who carries the responsibility as trusted advisor to serve IBM's largest 14 industry accounts in GCG and key enterprise accounts / business partner & ISVs. Armstrong Ying joined IBM in 2001 and spent most of his time with clients in the financial service industry. He is an IBM certified expert in high-end systems, software and enterprise-level solutions. He was IBM client technical advisor for the largest Chinese bank - ICBC (Industrial & Commercial Bank of China), and worked as chief client architect led significant & innovative IT projects, for example ICBC 2 cities-3 centers / Active-Active from planning, design and implementation. Armstrong Ying has rich first-hand experiences of IT & business innovation of large enterprises in the industries.