Guest Editors Introduction for Volume 7 Number 2

Special Issue on Cloud Computing Technology and Applications

Chi-Hua Chen, Chi-Chun Lo, Hsu-Yang Kung, Chih-Cheng Hung, Ping Wang, Maiga Chang

In recent years, cloud computing has been more and more popular. Cloud computing is based on an on-demand network access to a shared pool of configurable computing resources and is rapidly provisioned and released. This special issue is intended to foster the dissemination of state-of-the-art research in the area of cloud computing and applications (CCTA) for education and to focus on the technological support of any pedagogical approach.

We received many contributions which were submitted to this special issue and reviewed by international experts, and 8 articles were selected for publication. These articles studied and discussed 5 topics about CCTA which included (1) teaching, (2) system design and management, (3) support and application, (4) evaluation, and (5) research issues and challenges.

A. Cloud Computing: Teaching

In “An Experience of Teaching Mobile Cloud Computing”, Shen et al. designed the cloud computing course and taught the concepts of cloud computing which included cloud computing, cloud data center technologies, virtualization, distributed file systems, Azure programming, and Android programming. Other teachers can refer this contribution to plan and design a cloud-related course.

B. Cloud Computing: System Design and Management

For system design, in “A Mobile-Cloud Paradigm for Constraint-less Computing”, Kalyan Kumar and Madhu Kumar designed and implemented a framework and algorithms for enabling efficient mobile cloud applications and offloading services to users.

For management, in “Conceptual Framework of Cloud Computing Governance Model – An Education Perspective”, Hsu proposed a conceptual framework of cloud computing governance model which can help organizations to comply with all relevant information technology policies to enhance corporate performance.

C. Cloud Computing: Support and Application

In “Leveraging Cloud Computing to Support Experiential Learning in Distance Education”, Chong et al. witnessed an increasing adoption and implementation of CCTA for education. They demonstrated the value and potential impact of cloud computing in supporting experiential learning for distance education.

In “Cloud Computing: Providing Tools to Enable Next-generation Case-Based Learning in Undergraduate MIS Courses”, Koridou et al. addressed and discussed the issues of using cloud computing tools (e.g., communication, collaboration, authoring) for pedagogical facilitation of case-based learning activities.

D. Cloud Computing: Evaluation

In “A Genetic Algorithm (GA)-Based Personalized Learning Service in Cloud Learning Environments”, Chang et al. proposed a GA-based personalized recommendation mechanism for the personalized learning Software as a Service in the proposed cloud learning environments. They used the using satisfactions to evaluate the proposed mechanism meet the demands of most learners.

In “Evaluation of e-Learning Systems using DEA and Fuzzy Data Set”, Huang et al. proposed the evaluation models using data envelopment analysis (DEA) and fuzzy data set for implementing e-learning systems in the Internet and cloud environments. The proposed model can generate more discriminating scores in evaluating e-learning systems.

E. Cloud Computing: Research Issues and Challenges

In “Cloud Computing: New Opportunities and Challenges for Education”, Thomas provided an overview of cloud computing and explored the significant benefits and challenges around cloud computing. He also discussed how higher education institutions could harness cloud services to significantly reduce capital and maintenance costs on educational technology.

Finally, we wish to thank all authors and reviewers for their hard work for this special issue. We would like to thank Dr. Zhao, Editor in Chief of IEEE Technology and Engineering Education (ITEE), and IEEE Education Society Student Activities Committee (IEEE EdSocSAC) for their support in making this special issue.