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Advances in Computers and Technology for Education

Proceedings of the 11th International Conference on Educational Technologies (EDUTE '15)

Dubai, United Arab Emirates, February 22-24, 2015

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Preface

This year the 11th International Conference on Educational Technologies (EDUTE '15) was held in Dubai, United Arab Emirates, February 22-24, 2015. The conference provided a platform to discuss advanced educational software and hardware, agent-based educational technology, basic science in engineering education, corporate training, education for disabled learners, environment and educational technologies, mobile learning and evaluation, security aspects in education, virtual reality and modern education etc. with participants from all over the world, both from academia and from industry.

Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of this conference are published in this Book that will be sent to international indexes. They will be also available in the E-Library of the WSEAS. Extended versions of the best papers will be promoted to many Journals for further evaluation.

Conferences such as this can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

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Plenary Lecture 1

The Cloud as a Platform for Teaching and Research

Professor Khaled Salah
Electrical and Computer Engineering Department (Sharjah Campus)
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Abstract: The cloud computing platform has become prevalent today and is being utilized by many organizations in government, industry as well as academia. For teaching and training, the cloud can be an attractive and cost effective alternative to physical labs. The cloud can offer virtual labs with abundant on-demand virtual machines that can be rapidly launched and configured to provide necessary hands-on lab exercises. For research, the cloud can be used as a powerful high performance computing platform with almost infinite amount of storage and compute power to run scientific applications. In this talk, we share our experience in using the cloud to empower students with practical skills when teaching computer networks and cybersecuriy courses. In addition, we describe how we used the cloud to execute highly parallel scientific simulations and applications.

Brief Biography of the Speaker: Khaled Salah is an associate professor in the Electrical and Computer Engineering Department, Khalifa University of Science, Technology and Research (KUSTAR). He received the B.S. degree in Computer Engineering with a minor in Computer Science from Iowa State University, USA, in 1990, the M.S. degree in Computer Systems Engineering from Illinois Institute of Technology, USA, in 1994, and the Ph.D. degree in Computer Science from the same institution in 2000. Prior to joining KUSTAR, Khaled was an associate professor in the Department of Information and Computer Science, King Fahd University of Petroleum and Minerals (KFUPM), Dhahran, Saudi Arabia. Khaled has been teaching graduate and undergraduate courses and has over 100 publications in the areas of cloud computing, computer and network security, operating systems, computer networks, and performance evaluation. Khaled is an Editorial Board member of a number of prestigious international journals including IET Communications, IET Networks, Elsevier JNCA, Wiley IJNM, Wiley SCN, and J.UCS. Khaled was the recipient of Khalifa University Outstanding Research Award 2014/2015, KFUPM University Excellence in Research Award of 2008/09, and KFUPM Best Research Project Award of 2009/10, and also the recipient of the departmental awards for Distinguished Research and Teaching in prior years. Khaled has given a number of public talks, tutorials, and seminars on cloud computing and network security.

Plenary Lecture 2

Educational Technology Research and Practice Leading to a Problem Based Learning (POPBL) Education

Professor Anthony Lewis Brooks
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Denmark
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Abstract: Instructional technology has been described as "the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning."1, 2 In line with this, educational technology has been defined as "the study and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources".3
Cumulatively, the contemporary agreed definition of the term “educational technology “ in the field is posited as “all valid and reliable applied education science, such as equipment, as well as processes and procedures, that are derived from scientific research, and in a given context may refer to theoretical, algorithmic or heuristic processes: it does not necessarily imply physical technology.”4
This plenary will introduce Brooks’ research and related work influencing educational technology where bespoke original equipment as well as innovative processes and unique procedures have been developed. The work has realized and contributed to advancing educational technologies in and across disciplines relating to applying digital media for societal impact and benefit. As well as national and international funded projects, commercial product and start-up companies, in-action and on-action trans-disciplinary educational models have emerged. The models associate to advance the field further through tackling current weaknesses as evidenced by the research. The talk includes the educational concepts of Micro-development, Flow, Human afferent-efferent neural feedback loop closure, and more.
Conclusions in the talk will discus the investments required, both financial and human, as well as national resources, means and optimal scenarios of support/infrastructure towards realizing future advancements in the field with proposed international uptake of the work by nations with such resources, foresight and future vision. Following the close of the talk, Dr. Brooks will be open for discussions.

1 Garrison, D.R. & Anderson, T. (2003) E-Learning in the 21st Century: A Framework for Research and Practice, London, Routledge.
2 Januszewski, A. & Molenda M. (Eds.)(2007) Educational Technology: A Definition with Commentary, London, Routledge.
3 Richey, R.C. (2008) Reflections on the 2008 AECT Definitions of the Field. TechTrends. 52(1) 24-25
4 http://en.wikipedia.org/wiki/Educational_technology

Brief Biography of the Speaker: Dr. Associate Professor Anthony (aka Tony) Brooks is IFIP - (UNESCO) Danish Representative Europe (International Federation for Information Processing) and European Alliance for Innovation Chair of the Wellness SIB Market and society activity. He is active in the European Alliance for Innovation (EAI); CREATE-NET; ICST; as ArtsIT steering person. He is also active on numerous boards and committees including the coordination board of i3net: The European Network for Intelligent Information Interfaces since 2001.
Brooks’ work has led to numerous published patents (e.g. US6893407 – Communication Method and Apparatus) and commercial company start-ups. Credits include as European Commission expert reviewer on - Future Emerging Technologies (FET) and Horizon2020 programmes; the Council for the Humanities of the Netherlands Organization for Scientific Research (NWO), e-health innovations by SMEs; the F.R.S.-FNRS (Fonds de la Recherche Scientifique) -the funding agency for fundamental research in the French-speaking part of Belgium; and The Economic and Social Research Council (ESRC), UK.