Smart University: Concepts, Components, Systems and Technology

Goal

The goal of this workshop is to provide an excellent opportunity for faculty, scholars, graduate / Ph.D. students, administrators, and practitioners to learn and discuss innovative ideas, findings and outcomes of research projects, concepts, strategies, specific technologies, software, hardware, and best practices in the areas of smart university, smart education, smart classroom and smart e-learning

Main Topics

- Smart school, smart classroom, and smart education: best practices and case studies
- Smart university conceptual framework: “smartness” levels and features
- Smart university and smart classroom: software and hardware systems
- Smart university: technologies (ambient intelligence, Internet-of-Things, wireless sensor technology, RFID technology, etc.)
- Smart university faculty: instructor's skills for smart education and faculty development
- From traditional university to smart university: SWOT analysis
- From “smart classroom” to “smart society” continuum

Target Group

- Engineering faculty and educators
- Researchers and graduate students (including Ph.D. students)
- Practitioners
- University/college administrators and managers

Background knowledge expected of the participants

No previous knowledge is expected; however, a basic knowledge on technology-based teaching and learning will be usefull

Workshop Activities

Presentations, brain-storming sessions, learning-by-doing activities, discussions, Q&A session.

Workshop Time

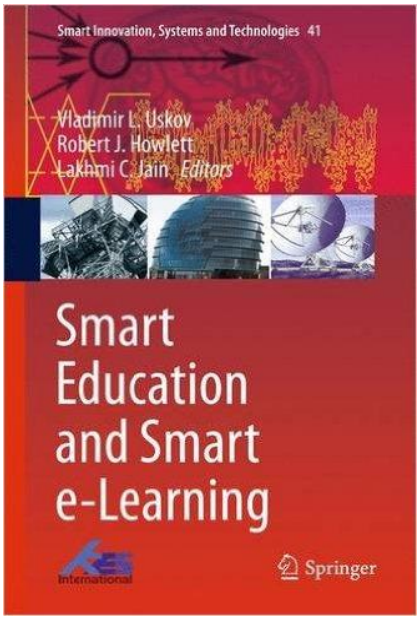
2 hours

Presenter

Dr. Vladimir Uskov is a professor of Computer Science and Information Systems and director of the InterLabs Research Institute on Advanced Technology Applications in Education at Bradley University (Peoria, IL, U.S.A.). His research areas and areas of expertise include but are not limited to a) smart education and smart e-learning, b) advanced technology-based education, c) software engineering, and d) agile and PMBOK software project management. Dr. Uskov is IEEE Senior Member (2004). His other positions and duties include but are not limited to:

- Principal investigator or co-principal investigator, National Science Foundation (NSF) major grants ## 0420506, 196015, 0019022 and 9950029
- (2015) Co-editor and co-author, Smart Education and Smart e-Learning, Springer, ISBN: 978-3-319-19874-3, 514 p.; http://www.springer.com/us/book/9783319198743
- (2014) Co-editor and co-author, Smart Digital Futures, IOS Press, ISBN: 978-1-61499-404-6, 808 p.; http: http://www.iospress.nl/book/smart-digital-futures-2014/

- (2014-2016) Founder and General Chair, Annual International conference on Smart Education and E-Learning (STET-2014, SEEL-2015, SEEL-2016); http://seel-16.kesinternational.org/
- (2004-2016) 30+ keynote and invited presentations
- (2002-2013) Chair, Annual International conference on Web-Based Education (WBE)
- (2002-2013) Chair, Annual International conference on Computers and Advanced Technology in Education
- (2004-2008), Editor-in-Chief, Advanced Technology for Learning (ATL) international journal
- (1995-2016) Visiting professor: in various universities of Japan, Germany, France, Italy, Holland, and Norway



Motivation

Smart university and smart education are emerging and rapidly growing areas that represent an integration of 1) smart and intelligent systems, smart objects and smart environments, 2) smart technologies, various branches of computer science and computer engineering, 3) state-of-the-art smart educational software and/or hardware systems, agents and tools, and 4) innovative pedagogy and advanced technology-based teaching strategies and learning methodologies.

Modern sophisticated smart devices, smart systems, and smart technologies create unique and unprecedented opportunities for academic and training organizations in terms of new approaches to education, learning and teaching strategies, services to on-campus and remote/online students, set-ups of modern classrooms and labs. The performed research clearly shows that smart education market, in general, and market of software and hardware for smart classrooms and smart universities, in particular, will exponentially grow in upcoming years (up to 2018).

Smart Education Market in 2013-2017

The global smart education and learning market is expected to reach $220.0 billion by 2017 at a CAGR of 20.3% between 2012 and 2017, including a) services segment with projected $97.9 billion by 2017 with a CAGR of 26.6%, b) content segment - $72.9 billion in 2017, at a CAGR of 12.1%, c) software segment - $37.2 billion, and d) hardware - $12.1 billion in 2017. Companies such as Ellucian, Inc. (U.S.), Smart Technologies (U.S.), Blackboard Inc. (U.S.), Kaplan Inc. (U.S.)., Promethean World Plc (United Kingdom), Pearson PLC (United Kingdom), and Informa Plc (Switzerland) are among key players on the smart education market.

Smart Classrooms' Market in 2014-2018.

The global smart classroom market will grow at a CAGR of 31.25% over the period 2013-2018. The two key factors contributing to this market growth are interactive display instruments and 3D education. Multiple global companies are among leaders in this area, including Apple, IBM, Microsoft, and SMART Technologies Inc.