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CONFERENCE ABSTRACTS

**2017 the 7th International Conference on
Information Communication and Management (ICICM 2017)**

**2017 the 6th International Conference on
Knowledge and Education Technology (ICKET 2017)**

Moscow, Russia

August 28-30, 2017



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WELCOME

Dear professors and distinguished delegates,

Welcome to the 7th International Conference on Information Communication and Management (ICICM 2017) and the 6th International Conference on Knowledge and Education Technology (ICKET 2017) in Moscow!

We wish to express our sincere appreciation to all the Conference Chairs, Local Chairs, Technical Program Committee Chairs, Publicity Chair and Technical Committees. Their high competence and professional advice enable us to prepare the high-quality program. Special thanks to the invited speakers as well as all the authors for contributing their latest research to the conference. We hope all of you have a wonderful time at the conference and also in Moscow.

The conference is featured with keynote speeches, parallel sessions. One best presentation will be selected from each parallel session, evaluated from: Originality, Applicability, Technical Merit, Visual Aids, and English Delivery. Wishing you all the very best of luck with your presentations!

We believe that by this excellent conference, you can get more opportunity for further communication with researchers and practitioners with the common interest in communication and management as well as knowledge and education technology

Your suggestions are warmly welcomed for the further development of the conferences in the future. We look forward to meeting you again next time.

Best Regards!
Yours sincerely,

ICICM & ICKET 2017 Organizing Committee
Moscow, Russia

NOTES & TIPS

Notes:

- ✧ Your punctual arrival and active involvement in each session will be highly appreciated.
- ✧ You are welcome to register at any working time during the conference.
- ✧ Certificate of Presentation will be awarded after your presentation by the session chair.
- ✧ One *Best Presentation* will be selected from each parallel session and the author of best presentation will be announced and awarded when the session is over.
- ✧ Please kindly keep your Paper ID in mind so that the staff can quickly locate your registration information onsite.
- ✧ Please kindly make your own arrangements for accommodations.
- ✧ Please keep all your belongings (laptop and camera etc.) with you in the public places, buses, metro.

Warm Tips for Oral Presentation:

- ✧ Get your presentation PPT or PDF files prepared.
- ✧ Regular oral presentation: 15 minutes (including Q&A).
- ✧ Laptop (with MS-Office & Adobe Reader), projector & screen, laser sticks will be provided by the conference organizer.

KEYNOTE



Prof. Atour Taghipour
University of LeHavre, France

Atour TAGHIPOUR is an Associate professor and the head of an international management master program at the University of Le Havre in France. He holds a PhD in Industrial Engineering from the Polytechnic School of Montreal in Canada. He received two masters' degrees, one in Management, Logistics & Strategy and other in Industrial Engineering. He has more than ten years of experiences as a manager in automobile industries. He has published two books and many research papers in international journals. His areas of research are supply chain and operations management.



Prof. Joachim Griesbaum
University of Hildesheim, Germany

Prof. Dr. Joachim Griesbaum was born in Lahr/Schwarzwald, Germany, in 1971. He obtained his doctoral degree in Information Science in 2006 from the University of Konstanz in Germany. In 2008 he joined the University of Hildesheim. He has more than 60 papers published in international journals and conferences. His research interests include Social Media, E-Learning, Knowledge Management and Online Marketing.

KEYNOTE



Prof. Alexander Bernstein
Skolkovo Institute of Science and Technology (Skoltech), Russian Federation

Professor Alexander Bernstein is a Principal Research Scientist in Skolkovo Institute of Science and Technology (Skoltech)—in the Center for Computational and Data-Intensive Science and Engineering.


Prof. Bernstein started his career at the Research Institute of Automatic Equipment in 1969, where he was developing mathematical models and algorithms for computer networks. At the same time, he was engaged in mathematical statistics. For research in this field, he received the Candidate of Sciences Degree in Physics and Mathematics from Steklov Mathematical Institute of USSR Academy of Sciences (Leningrad branch) in 1973 and the Doctor of Sciences degree in Physics and Mathematics in 1987 from the Department of Computational Mathematics and Cybernetics of Moscow State University. In 1982, the Higher Attestation Commission awarded him with the rank of Senior Research Scientist in the Theory of Probability and Mathematical Statistics. In the year of 1991, the Higher Attestation Commission awarded Alexander with the academic rank of Professor in the field of Intelligent Technologies and Systems.

In 2002, Alexander joined the Software Engineering Center of the Russian Academy of Sciences to lead the projects in developing data analysis and applied mathematics software. Prior to joining Skoltech, Alexander held the positions of Chief Researcher at the Institute for System Analysis RAS and Lead Scientist in the Data Analysis Research Lab at the Institute for Information Transmission Problems RAS. At the same time, he had part-time full professor positions at National Research University Higher School of Economics and Moscow Institute of Physics and technology.


Conference Agenda & Abstracts

AGENDA

<Aug 28, 2017, Monday>

 Lobby/ 1st Floor	
10:00-17:00	Registration & Materials Collection

Morning <Aug 29, 2017, Tuesday>



 Hall Kandinsky/3rd Floor		
10:00-10:10	Opening Remarks	Prof. Alexander Bernstein Skolkovo Institute of Science and Technology (Skoltech), Russian Federation
10:10-11:00	Keynote Speech I	Prof. Joachim Griesbaum University of Hildesheim, Germany Speech Title: <i>Mobile E-Learning App Economy</i>
11:00-11:30	Coffee Break & Group Photo	
11:30-12:20	Keynote Speech II	Prof. Atour Taghipour University of LeHavre, France Speech Title: <i>Research Supervision: A Methodology</i>
12:20-13:10	Keynote Speech III	Prof. Alexander Bernstein Skolkovo Institute of Science and Technology (Skoltech), Russian Federation Speech Title: <i>Predictive modeling in Data Network</i>



Lunch Time <13:10-14:30> Location: Restaurant/2nd Floor



AGENDA

Afternoon <Aug 29, 2017, Tuesday>

14:30-17:15	Session I- Communication and signal system	 Hall Kandinsky 3 rd Floor
	MM005 MM008 MM015 MM028 MM036 MM037 MM038 MM044 MM061 MM068 MM029	
14:30-17:00	Session II- Business intelligence and business administration	 Hall Perov 3 rd Floor
	MM019 MM021 MM023 MM030 MM033 MM034 MM035 MM045 MM049-A MM012	




Coffee Break <17:15---17:30>

17:30-19:45	Session III- Computer science and learning technology	 Hall Kandinsky 3 rd Floor
	MM016 MM051 MM072 MM075 ET021 ET037-A ET029-A ET007-A MM067	
17:30-19:45	Session IV-Information education and management	 Hall Perov 3 rd Floor
	ET003-A ET006 ET023-A ET2001-A ET030-A ET032-A ET034 ET026-A ET3003-A	




Dinner <19:45-21:30> Location: Restaurant/2nd Floor

<Aug 30, 2017, Wednesday>

	
10:00-17:00	Social Program/Visit in Skolkovo Institute of Science and Technology

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Morning, August 29, 2017

OPENING & KEYNOTE SPEECHES Time: 10:00-13:10 Location: Hall Kandinsky/3 rd Floor	
10:00-10:10 OPENING REMARKS	Prof. Alexander Bernstein Skolkovo Institute of Science and Technology (Skoltech), Russian Federation
10:10-11:00 KEYNOTE SPEECH I	<p style="text-align: center;">Title- Mobile E-Learning App Economy</p> <p style="text-align: center;">Prof. Joachim Griesbaum University of Hildesheim, Germany</p> <p>ABSTRACT--This paper provides a tentative overview and first approximation of the growing E-Learning app economy and delivers first insights of its impact on learning with a focus on primary education. For that purpose, a tripartite explorative research design was employed, consisting of: a) a market overview with a focus on business models and providers, b) an expert-based assessment of the learning and interface design of a sample of learning apps, c) an oral survey of teachers and pupils to understand and express their appraisal of learning apps. Results show that in the mobile app economy there is a larger variety of vendors than in the classical E-Learning market. Most of the investigated apps do not follow sophisticated didactical paradigms, but employ a drill and practice approach and exhibit simple and usable interfaces. Teachers assess learning apps primarily as suitable tools to complement traditional teaching. Pupils' assessments indicate that game-based elements, especially with rewards, are in high demand as they raise and maintain the motivation of the learners.</p>
 Coffee break & group photo 11:00-11:30	

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<p>11:30-12:20 KEYNOTE SPEECH II</p>	<p style="text-align: center;">Title- Research Supervision: A Methodology</p> <p style="text-align: center;">Prof. Atour Taghipour University of LeHavre, France</p> <p>ABSTRACT--Supervising a research is one of the most advanced and complex form of personalized educating skills, which needs sophisticated methodology. Generally, two supervision methodologies are used: hands-on and hands-off supervision (Bernstein 1977, 1990 & 1996).</p> <p>The hands-off approach is based on minimum intervention of supervisors. This approach is, more specifically, applicable for autonomous candidates or for the candidates who work on the non-related domains to the supervisor's domain of research. In the case of non-autonomous candidate's completion is slower and longer and the supervisor will not publish any paper with the candidate. On the other side, in the case of the hands-on approach, the supervisors actively intervene in the process of completion of the research and integrate the candidates in their research and teaching responsibilities. This approach, at the same time, trains the researchers that are more collaborative.</p> <p>Whatever the general supervision approaches, explained in the previous paragraph, there is not enough investigations on a conceptual framework of research supervision. This article and speech, based on interviews with supervisors in the operations research discipline, aims to fill this gap. During this speech, we try to explore a proposed framework to supervise the research projects and research candidates. This framework and methodology (5S3R5CF) comprises four main steps, including initializing (5S), contextualizing (3R), contributing (5C) and finalizing.</p>
<p>12:20-13:10 KEYNOTE SPEECH III</p>	<p style="text-align: center;">Title- Predictive modeling in Data Network</p> <p style="text-align: center;">Prof. Alexander Bernstein Skolkovo Institute of Science and Technology (Skoltech), Russian Federation</p> <p>ABSTRACT--Information and control systems (ICS) are intended for controlling and monitoring the processes running in various industrial systems. The ICS consist usually of a large number of the territorially distributed objects communicated with each other through communication system such as Data network (DN) which provides an exchange of information packages between ICS objects. When designing the ICS, various technical decisions about its architecture and choice of automation equipment, algorithms and protocols should be made. Predictive modeling is a main way to make informed decisions in the process of designing the ICS and to predict a behavior of the ICS at various operation modes in different environmental conditions and external impacts. A</p>

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simulation is universal and powerful, but, at the same time, very "expensive" modeling tool, since a necessary to simulate a large number of interrelated processes running in the ICS simultaneously. In particular, for modeling a package delivery time from certain object-sender to object-receiver, necessary to simulate the times standing in the transmission queues by all channels belonging to a package route. Whereas the number of ICS objects in real ICS can reach thousands, a possibility of ICS modeling is achieved, as a rule, by a refusal to a detailed simulation of certain processes running in the ICS.

When modeling the ICS, certain network simulators are usually used instead of a detailed simulation of the DN. But commonly used simulators do not take into account a number of important properties and features of the package transmission processes over the network, and this significantly reduces an accuracy of ICS simulation.

In the speech, modern predictive modeling technologies will be used for creating the statistical model of the DN which allows predicting the delivery times of the packages transmitted through this network depending on a state of the network (network load) and takes into account the statistical dependences between the delivery times of different transmitted packages. The model underlies the proposed technology of a construction of Monte-Carlo data network simulators



Lunch Time: 13:10-14:30 Location: Restaurant/2nd Floor

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Session I

Communication and signal system

Time 14:30-17:15

Location Hall Kandinsky/3rd Floor

Chaired by *Professor Hu Hwai-Tsu, National I-Lan University, Taiwan*

Paper ID *MM005 MM008 MM015 MM028 MM036 MM037 MM038*

MM044 MM061 MM068 MM029

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<p>MM005 14:30-14:45</p>	<p>Blind Audio Watermarking by Configuring the Shape of Sorted LWT Coefficient Magnitudes in Synchronous Frames</p> <p>Hwai-Tsu Hu and Yun-Hsiang Chang</p> <p>Department of Electronic Engineering , National I-Lan University, Taiwan</p> <p>ABSTRACT--This paper presents a novel blind watermarking scheme that manipulates the shape of sorted coefficient magnitudes after performing lifting wavelet transform on audio signals. To cope with time shifting and/or time scaling attacks, an improved synchronization scheme is introduced to identify the size and location of each frame for watermarking. The embedding strength, as reflected by the signal-to-noise ratio, is controlled at a level near 20 dB while operating at 86.13 bits per second. The scores obtained using the PEAQ metric indicate that the watermarked audio signals are perceptually very close to the original ones. Experiment results confirm that the inserted watermark is very robust against common signal processing operations and also resistant to time-scaling and time-shifting attacks.</p>
<p>MM008 14:45-15:00</p>	<p>Unified Connectivity of IoT Devices through Abstraction of Application Protocols</p> <p>Dessislava Petrova-Antonova, Georgi Andreev, Sylvia Ilieva</p> <p>Sofia University, Bulgaria</p> <p>ABSTRACT--Internet of Things comes with significant benefits in human live and work, but it brings plenty of challenges. Providing security in the IoT network is a primary priority. The connected devices and the data they exchange need to be protected from vulnerabilities and unauthorized access. The full adoption of IoT is suppressed by privacy considerations and legal issues. In addition, the lack of interoperability support and standards prevents devices to communicate in a uniform manner in order to provide valuable services for users and industry. The fast growth of the technologies leads to production of wide variety of devices based on different application protocols that are hard to be connected without usage of intermediators. The paper addresses IoT challenges by proposing a solution for unified connectivity of devices through abstraction</p>

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	<p>of the application protocol. The solution is implemented as a core layer of framework for integration of short range devices.</p>
MM015 15:00-15:15	<p style="text-align: center;">HTTPS: a Phishing Attack in a Network</p> <p style="text-align: center;">Diana Gabriela Noemí Benítez-Mejía, Alejandro Zacatenco-Santos, Gabriel Sánchez-Pérez, Linda Karina Toscano-Medina</p> <p style="text-align: center;">Instituto Politécnico Nacional, Mexico City, Mexico</p> <p>ABSTRACT--In this paper, we discuss the possibility of finding phishing attacks even in cases where the victim sees in their web browser, the same URL as the legitimate website with the padlock and the HTTPS certificate. This attack is not easy to detect due to the fact that it complies with security measures as a legitimate HTTPS connection.</p> <p>We perform the attack with a web server and a fake certificate authority. The web server hosts the phishing website, whereas the fake certificate authority, issues the certificates for the website. The success of this attack occurs when the victim or the attacker exports the certificates into the web browser. With this paper we prove that some web browsers are vulnerable to this attack, despite their having their own certificate authorities list.</p>
MM028 15:15-15:30	<p style="text-align: center;">A Novel Antenna Selection Algorithm based on Capacity Maximization in Massive MIMO System</p> <p style="text-align: center;">Hao Jin Li, Wen Le Bai, Wen Zhang</p> <p style="text-align: center;">Department of Electronic Information Engineering, North China University of Technology, China</p> <p>ABSTRACT--M-MIMO(Massive Multi-Input Multi-Output) is considered as a novel technology for 5G(the fifth generation of wireless communication system). On the one hand, due to the limited number of Radio Frequency(RF) chains, the number of antennas can't be infinite. On the other hand, the more the number of antennas, the higher the cost of hardware. In the case, efficient antenna selection technology has become a research hotspot. In this paper, a novel receiver antenna selection algorithm by combining maximum norm and relativity is proposed, which aims to tradeoff between</p>

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	<p>performance and complexity. The computational complexity and the channel capacity of various antenna selection algorithms have been compared, simulation results show that the improved algorithm offers reduction in complexity while ensuring acceptable performance in terms of channel capacity. Simultaneously, it also studies the capacity of the M-MIMO system under correlated channels.</p>
MM036 15:30-15:45	<p>Methods of analysis of news events in the information space based on the use of almost – periodic functions, wavelet transforms and Hurst’s self-similarity</p> <p>Zhukov Dmitry Olegovich, Novikova Olga Aleksandrovna, Otradnov Konstantin Konstantinovich</p> <p>Moscow Technological University, Russia, Moscow</p> <p>ABSTRACT--The authors of the present work propose to create a bound on the time scale database (DB) of natural language text documents (archives of the news for the last 10 – 15 years, the texts of publicly available scientific encyclopedias, articles, electronic newspapers and magazines, etc.) to describe the information space. It is necessary also to make their treatment using the methods of mathematical linguistics to create a dictionary of terms (including N – grams), vectoring of documents and dividing them into semantic clusters. Based on the collection of dated vectors and clustering the authors of the presented works propose different metrics of monitoring processes in the information space. In general, one such metric may be the magnitude of the cosine value of the angle between the vector defining the position of the center of the semantic information of the cluster and a conditional axis, or the director of the information space. The director may be determined by the method of least squares as the mean direction of all vectors that form an information space [1]. In addition to the cosine of the angle it can be used as a change in the volume or square shape of the selected semantic cluster metric in the information space. Changing any of the metric over time determines the spectrum of the information process. Analysis of the spectra of informational events by using the methods of almost – periodic functions, wavelet transforms and Hurst’s self-</p>

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	<p>similarity gives the possibility to determine the structure of repetitive elements, and thus to predict the return time of the events described in the semantic cluster.</p>
MM037 15:45-16:00	<p>An Approach for Identifying the Likelihood of an Irregular Terrain Profile Being a Multipath Scattering Center in Emitter Localization</p> <p>Yaser Dalveren, Ali Kara</p> <p>Atilim University, Department of Avionics, Turkey</p> <p>ABSTRACT--In a single-receiver source localization scenario, pulses radiated from an emitting source (emitter) are reradiated from distributed points over the irregular terrain due to the diffuse scattering. Obviously, diffuse scattering may be occurred at anywhere over irregular terrains in dense scattering environments. Hence, a particular region from which the multipath pulses are scattered over the irregular terrain can be taken as a scattering center. In fact, a multipath scattering center may be approximated as multiple reflection points visible to the receiver. For this reason, an uncertainty in location of multipath scattering centers is expected. However, as proposed in this study, the likelihood of a particular region from which the multipath pulses are scattered may be identified if digital data of the irregular terrain, positions of the receiver and the transmitter, and Angle of Arrival (AOA) of the multipath are provided. In this context, this study attempts to provide an approach for identifying the likelihood of a particular region being a scattering center over the irregular terrain. To this end, Geometric Optics (GO)-based wave propagation principles are exploited to estimate path loss that would a basis for estimating likelihoods. Simulations are performed to illustrate the effectiveness of the proposed approach. This study aims to make significant contribution to an ongoing research on passive localization of radar emitters by exploiting multipath in dense scattering environments.</p>
MM038 16:00-16:15	<p>Fault Tolerance Improvement for Cloud Data Center</p> <p>Humphrey Emesowum, Athanasios Paraskelidis, Mo Adda</p> <p>School of Computing, University of Portsmouth PO1 3HE, United Kingdom</p>


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	<p>ABSTRACT--One of the main research concerns of Data Center Network designs is the achievement of reasonable throughput during multiple failures. To design a fault tolerant data center network that will give operators the operational efficacy they needed to achieve such reasonable throughput is a hard nut to crack. In this paper, we proposed an improved version of fat-tree interconnection to address the issues of fault tolerance. Fat-Tree is a well-known architecture widely used in data center networks due to its congestion control and fault tolerance capabilities attributable to its availability of alternative paths from source to destination. Our focus is on cloud data center for client to server communications, thus Email and FTP applications were run separately on all the designs. Using the same number of servers and switches, we proved that our proposed Hybrid and Reversed Hybrid designs outperformed Fat-tree topology designs at multiple failures. The results show an improvement on fault tolerance capability, and cost-effectiveness for cloud data center.</p>
MM044 16:15-16:30	<p>Private Subnetting One (PS1), an Algorithm for Private IPv4 Address Allocation</p> <p style="text-align: center;">Nabhan Hamadneh, David Murray</p> <p style="text-align: center;">Department of Computer Science, Hashemite University, Zarqa, JORDAN</p> <p>ABSTRACT--Network hosts in private enterprises require local connectivity without any external connections. These networks operated using TCP/IP protocol and require a private address space. This article proposes a novel algorithm for IPv4 address allocation for this type of networks. This algorithm can be used by educators of subnetting, ISPs, university students and researchers to simplify the process of IPv4 address allocation. A tool called Private Subnetting One (PS1) programmed under Java is introduced in this article. This tool can be used by network engineers or university tutors to explain complex subnetting problems to students in introductory networking courses, such as CCNA.</p>
MM061 16:30-16:45	<p>Detection of Errors in the Layout Design of Websites for Mobile Devices Based on Capturing User Behaviour</p> <p style="text-align: center;">Lukáš Čegan and Petr Filip</p>

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	<p style="text-align: center;">University of Pardubice, Pardubice 530 02, Czech Republic</p> <p>ABSTRACT--Smart mobile touch devices with a small screen such as mobile phones or tablets have become part of everyday life. These devices are taking over conventional personal computers and are increasingly used for accessing web-content. For website developers it is a new challenge which brings issues in the development strategy, because PCs are used differently than mobile touch devices. Adapting web design for every device has become a necessity and a responsive web-design has become standard for every newly developed website. Even if the website development is driven by best practices and developer`s experiences, issues that decrease user experience (UX) on the specific device still exist. This paper presents architecture for capturing user behaviour, followed by a statistical evaluation process which helps to detect errors in the layout design of websites. Information on website use is gathered from real users. Evaluated data is used as feedback for UX-designers who can improve web-design for specific devices and increase user experience.</p>
MM068 16:45-17:00	<p style="text-align: center;">Performance Improvement of ZigBee Networks in Coexistence of Wi-Fi Signals</p> <p style="text-align: center;">Atef Sadat Seyedolhosseini, Nasser Masoumi, Mehdi Modarressi</p> <p style="text-align: center;">Department of Electrical and Computer Engineering, College of Engineering, University of Tehran Tehran, Iran</p> <p>ABSTRACT--In this paper, the performance of ZigBee networks in presence of Wi-Fi interference is evaluated. ZigBee networks performance is adversely affected by Wi-Fi signals, since Wi-Fi channels overlap with ZigBee. Besides, power consumption of nodes is also increased, mainly due to the need for retransmission of dropped packets. In this paper, in order to take this issue into account, optimum distance between nodes in ZigBee networks in coexistence of Wi-Fi signal is extracted theoretically; the formulation is based on Signal Interference Noise Ratio (SINR) and is used to improve network efficiency by lowering the data failure rate. Moreover, a new routing methodology is also presented for ZigBee networks when Wi-Fi sources are around. The routing method</p>

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	<p>combines the normalized value of Link Quality Indicator (LQI) and conventional topological metrics to reduce Packet Error Rate (PER) and Bit Error Rate (BER), while keeping the packet path as short as possible. Simulation results shows that the proposed methods can improvement the total network performance considerably.</p>
MM029 17:00-17:15	<p style="text-align: center;">Fast Digital Simulation of SAR Echoes Based on GPU</p> <p style="text-align: center;">Mingbo Zhu, Qi Chen, Tao Guo and Wei Dong</p> <p style="text-align: center;">Department of Electronics and Information Engineering, Naval Aeronautical and Astronautical University, Yantai, China</p> <p>ABSTRACT--To deal with the fast simulation of Synthetic Aperture Radar (SAR) echoes, in this paper, we introduce an fast digital simulation method based on Graphic Processing Unit (GPU). Model of SAR echoes is established at first. Then, the digital simulation for SAR echo of single pulse is optimized by improved concentric circle algorithm. Moreover, the parallel computation based on GPU is adopted to further accelerate the whole digital simulation of all the SAR echoes. In the end, the validity of the above fast digital simulation method of SAR echoes has been verified and the experimental results show that the above method can accelerate the simulation speed dramatically compared with the traditional one.</p>
 Coffee Break <17:15---17:30>	

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Session II Business intelligence and business administration

Time 14:30-17:15

Location Hall Perov /3rd Floor

Chaired by *Prof Armstrong Kadyamatimba (PhD & CEng), University of
Venda, South Africa*

PAPER ID

MM019 MM021 MM023 MM030 MM033 MM034 MM035 MM045

MM049-A MM012

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MM019 14:30-14:45	<p style="text-align: center;">Pediatric Fluid Therapy Calculator Mobile Application(PFTC)</p> <p style="text-align: center;">Orawit Thinnukool, Pattaraporn Khuwuthyakorn and Pattarapan Sukwuttichai</p> <p style="text-align: center;">Department of Modern Management and Information Technology College of Arts, Media and Technology, Chiang Mai University, Chiang Mai 50200, Thailand</p> <p>ABSTRACT--Calculation of fluid therapy is one of the most important aspects of treatment for pediatric patients, especially newborns. Highly accurate computation of fluid intake must be performed for appropriate medication. Patients who are treated by fluid therapy with intravenous substances or through the gastrointestinal tract generally receive medicine in form of injections, oral medicine and other substances including food and milk etc. Ability to calculate accurately in monitoring fluid therapy for pediatric patients has become an important skill for pharmacists. Normally, to perform fluid therapy calculation, a calculator together with a comparison chart and specific criteria from text books or formulas for calculation fluid therapy injections are required. This traditional practice is inappropriate at the point of care for rapid calculations for volume replacement in a true pediatric emergency.</p> <p>This research aims to develop a mobile application to calculate fluid therapy in pediatric patients, called Pediatric Fluid Therapy Calculator (PFTC). Holliday-Segar equation was applied to develop the algorithm for calculation. The application consists of four main functions: patient information management function, quick fluid therapy calculation function, alarm/allergy medicine notification function and information transferring function. The application was evaluated by experts and users using a questionnaire in order to measure the application performance in terms of quality and satisfaction which the result of both were satisfied. The proposed PFTC mobile application can be used to rapid calculate fluid therapy in pediatric patients for assisting medications or clinical practice.</p>
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<p>MM021 14:45-15:00</p>	<p>Cost Optimization of Reverse Logistics: A Review</p> <p>Sandra Yang, Atour Taghipour, Beatrice Canel-Depitre</p> <p>Normandy University, 25 Rue Philippe Lebon,, 76600 Le Havre</p> <p>ABSTRACT--Reverse logistics is a new concept in logistics. It has gained increasing importance as a profitable and sustainable strategy. It is a key element with regard to the increasingly stringent regulatory pressures across the world on the end of life products. Some manufacturers have engaged in product recovery to reduce production costs, enhance environmental performance and pre-empt legislation. However, the main question is to how optimize the process of reverse logistics. This paper tries to answer this question by studying the literature of reverse logistics. Based on the literature, we propose three steps necessary in the management of the reverse logistics activities.</p>
<p>MM023 15:00-15:15</p>	<p>Experiences in Secure Integration of Byod</p> <p>Mohamed AMOUD, Ounsa ROUDIES</p> <p>SIWeb Team - École Mohammadia d'Ingénieurs (EMI)</p> <p>Mohammed V University in Rabat, Morocco</p> <p>ABSTRACT--Bring Your Own Device (BYOD) is an important new model for allowing people to choose the best way to work, including full mobility and productivity on their choice of device. This trend makes Enterprise Mobility Management (EMM) possible to increase business agility, individual productivity and job satisfaction by freeing people to choose the best time, place and device to get their work done. To allow this flexibility, enterprise must be able to secure applications and data on a potentially unlimited variety of devices, over any kind of network, in any location, even these devices contain personal applications and data. This paper presents a Systematic Literature Review (SLR) of BYOD published research articles to answer the following question: "How to integrate securely a BYOD in an Enterprise".</p>

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MM030 15:15-15:30	<p style="text-align: center;">Commodity Supply Chain: A Case Study of Taconite</p> <p style="text-align: center;">Qingyu Zhang, Mei Cao</p> <p style="text-align: center;">Research Institute of Business Analytics & SCM</p> <p style="text-align: center;">Shenzhen University, China</p> <p>ABSTRACT--Many supply chain studies have been conducted on the manufactured products in the manufacturing industries while few supply chain studies focus on the commodities such as taconite iron ore in the mining industry. A taconite supply chain seems less complicated than an automotive supply chain in terms of the number and tiers of the suppliers involved in the chain. However, a simple taconite supply chain has its unique characteristics. Recognizing these characteristics and developing supply chain strategies based on these characteristics will help not only the mining company but also its customers, the steel mills, and its customers' customers, the automakers to remain competitive in today's economic crisis. The objective of this case study is to 1) examine the supply and demand sides of taconite supply chain as well as taconite transportation; 2) identify the characteristics of the taconite supply chain; 3) develop the strategies for managing the taconite supply chain. Taconite mining and processing operated by a company is selected as the subjects of the case study since taconite production in this area accounts for more than 70% of the iron ore production in the United States.</p>
MM033 15:30-15:45	<p style="text-align: center;">Architecture of Integrative Information and Communication System Developed Based on the Results of Space Activities in the Agro-Industrial Complex</p> <p style="text-align: center;">Aleksander Kukshin, Aleksey Dorofeev</p> <p style="text-align: center;">National Research University Higher School of Economics Financial University under the Government of the Russian Federation, Russia, Moscow</p> <p>ABSTRACT--The article contains information on the architecture of integrative</p>

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	<p>information and communication system developed based on the results of space activities for the development of digital economy in the agro-industrial complex of the Russian Federation. The article provides a review of the development stages of information and analytical solutions in Russian agriculture. There is also an approach for the introduction of modern ICT in order to ensure an intensive development of the agro-industrial complex in Russia within the digital economy.</p>
MM034 15:45-16:00	<p>Information support reliability of Transportation Systems in the Industry</p> <p>Valery Kurganov, Mikhail Gryaznov, Aleksey Dorofeev</p> <p>National Research University Higher School of Economics</p> <p>Financial University under the Government of the Russian Federation, Russia, Moscow</p> <p>ABSTRACT--This paper covers issues related to the reliability of information transportations process in industrial enterprises. Under virtually all-round computerization, the transition to "smart" technological solutions in industrial field, including the transportation management, in our country is associated with certain difficulties. To a great extent, this is due to the lack of mutual understanding between members of scientific-research community, IT-specialists and production workers. For instance, Russian enterprises at present have a poor understanding of how information may create value for business, and strengthen their competitive capabilities. The study of reliability of transportation process, considered in our work, has a direct influence on the production quality and the increase of efficiency on the whole. As a result, we have developed an "Autobase-Expert" analytical application, wherein the included models make it possible to evaluate the efficiency of automobile transport operations of industrial enterprises. The approbation of the application has revealed ways of further development of management decision support systems based on the architectural approach.</p>


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MM035 16:00-16:15	<p>Modelling to be based on systems of differential kinetic equations to processes group selection voters during the electoral campaign of Trump-Clinton 2015 – 2016</p> <p>Zhukov Dmitry Olegovich, Alyoshkin Anton Sergeevich, Obukhova Anna Gulamovna</p> <p>Institute of Complex Security and Special Instrument Engineering Moscow Technological University, Moscow, Russia</p> <p>ABSTRACT--The purpose of this paper is developing methods based on differential kinetic equations, for modelling group behaviour and managing user actions in complex social systems. It is to compare the theoretical results obtained with the observed data, the electoral campaign for distributing the votes of voters during the election race of 2015 - 2016 for the post of US President between Donald Trump and Hillary Clinton was chosen.</p> <p>In this work it was presented transition diagram describing the change in moods over time between the preferences of voters in relation to candidates that was constructed to describe the electoral campaign based on kinetic differential equations. Apart from the coefficient of proportionality that affect to the transitions between voters in this model there were included the time of change of their views. Processing of available sociological data with using method of almost-periodic functions made it possible to determine the proposed model's numerical value of a number of the series parameters. In particular, it was determined the mean values of times for changing the views of voters.</p> <p>The selection of the coefficients in the kinetic differential equations, based on observations of the social behaviour of the voters, makes it possible to obtain a good correspondence between the theoretical results of the model and the observed data. This suggests that the description of the group behaviour of users in social systems (based on differential kinetic equations) may allow solving the</p>
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	<p>inverse kinetic problem and determining the equations coefficients from the observed data. In this case it can be developed the model for predicting and changing the preferences of group selection participants.</p>
<p>MM045 16:15-16:30</p>	<p style="text-align: center;">The Factors of BPM Economic Impact</p> <p style="text-align: center;">Igor Fiodorov</p> <p style="text-align: center;">Plekhanov Russian University of Economics (PRUE), Russia, Moscow</p> <p>ABSTRACT--The economic effect of IT implementation is associated with profound changes in organizational practices of the company. Therefore a development and commercial introduction of BPM systems requires the appearance of new conveyor methods of mass production that provide an enterprise with a long-term economic success.</p>
<p>MM049-A 16:30-16:45</p>	<p style="text-align: center;">Forecasting Air Passenger Demand with System Dynamics Approach</p> <p style="text-align: center;">Volkan Cakir and Sait Oguz</p> <p style="text-align: center;">Arel University, Turkey</p> <p>ABSTRACT--Istanbul is one of the glowing commercial and touristic centers not only for Turkey but also for the region. According to local greater city municipality and state this will necessitate an expansion to the major airport (Ataturk) of Istanbul. In this study, a simulation model is developed in order to forecast air passenger demand and to determine when a capacity expansion of Istanbul Atatürk International Airport will be needed using System Dynamics approach. In thorough literature survey it is found that airfare and runway utilization, level of service, population and Gross Domestic Products are key factors considered when creating models for air passenger demand. In this paper terror attacks inserted as a new factor that may affect air transportation demand to the current literature. Study results show that although terror might have a negative effect on requirements of the Istanbul Atatürk International Airport, other factors play dominant roles and a capacity expansion will be required before 2023.</p>

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<p>MM012 16:45-17:00</p>	<p>Understanding Modules At-Risk Within University Using A Context-Aware Business Intelligence Framework</p> <p>Dr. Alfred Mutanga and Prof. Armstrong Kadyamatimba</p> <p>School of Management Sciences, University of Venda, Thohoyandou, South Africa</p> <p>ABSTRACT--This paper, shows the authors' efforts to determine the riskiness of academic modules at a South African University. In determining the modules at risk, the authors used a hybrid of sequential and cyclical methodological approaches, based on a context-aware business intelligence framework. The risk indicators derived from academic module enrolment data elements, were weighted and aggregated to determine the riskiness of a module. The results showed that the riskiness of a module can be zero, weak, strong and extreme. Depending on the riskiness of a module, the institution can determine the appropriate intervention strategies for students to succeed in passing the module. This work proves to be essential for program and module reviews which are important quality assurance exercises within the South African higher education institutions.</p>
<p style="text-align: center;"> Coffee Break <17:15---17:30></p>	

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Session III

Computer science and learning technology

Time 17:30-20:00

Location Hall Kandinsky/3rd Floor

Chaired by

PAPER ID

MM016 MM051 MM072 MM075 ET021 ET037-A ET029-A ET007-A

MM067

ABSTRACTS

<p>MM016 17:30-17:45</p>	<p>An Artificial Bee Colony Algorithm for Solving the Weapon Target Assignment Problem</p> <p>Rafet Durgut, Hakan Kutucu, Sedat Akleylek</p> <p>Karabuk University , Turkey</p> <p>ABSTRACT--In this paper, we deal with the static weapon target assignment (WTA) problem which is a hard combinatorial optimization problem having some industrial applications. The aim of the WTA problem is to find an assignment of weapons to targets with the minimum total survival value of the targets. The WTA problem is known to be NP-complete problem. In this paper, we propose a novel artificial bee algorithm to give an efficient solution to the WTA problem. We test the proposed algorithm with benchmark problem instances and compare it with some other meta-heuristics in the literature. Computational tests show that our algorithm is competitive.</p>
<p>MM051 17:45-18:00</p>	<p>Integrated electronic publishing system for scholars: a case study in Shahid Beheshti University (I.R.Iran)</p> <p>Amir Reza Asnafi and Maryam Pakdaman Naeini</p> <p>Faculty member of Information Science and Knowledge Department, Shahid Beheshti University</p> <p>ABSTRACT--Publishing management is a circle of knowledge management. The scientific process requires a national model publishing. In today's world IT infrastructure is the basis of scientific publishing. Today, major changes have occurred in the field of publishing. There is many changes in the dissemination of information for the publication of the book publishing (books, essays, articles, multimedia, etc.). So it seems that publishers do not fade in the new era, but also they develop. In the publication area, according to the book just is not enough. To all forms and types of information sources such as books, magazine-patents-thesis of video and audio in cycle-file information and publishing thought. In circle of information publishing, all forms and types of data sources, including book-magazine-patents-theses audio-files of video and must be considered. Scholars should be able to present widely their articles and research findings</p>

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	<p>to other researchers. Shahid Beheshti University in Tehran recently has created a comprehensive system for electronic publishing. In this system we can see 4 databases that include: books publishing, journals publishing, library software and academic tools for interaction among faculty members that is called Pejvak. For example, users can log in journals system and submit their papers for a journal or buy their needed papers from that system. Customers can buy academic books that are published in Shahid Beheshti University from online book shopping of university. Clients can browse holding the colleges' libraries using library software that is called Ketabyare Pand. Finally, faculty member can interaction together and upload their published scientific documents in Pejvak, an Iranian academic social network. This comprehensive and integrated system for electronic publishing is called Pand, a database for knowledge publishing. Shahid Beheshti University aims to provide this electronic publishing system include: Expand the boundaries of knowledge, easy access to valuable works of scientific, technical and academic, providing academic curriculum resources, publishing reference books such as dictionaries and encyclopedias, Publishing articles and speeches presented at conferences of university, and publishing academic journals.</p>
MM072 18:00-18:15	<p style="text-align: center;">Low-power Parallel Data Processing Using Computation Reuse</p> <p style="text-align: center;">Bitra Dabiri, Seyyed Hossein SeyyedAghaei Rezaei, Mehdi Modarressi</p> <p style="text-align: center;">Department of Electrical and Computer Engineering, College of Engineering, University of Tehran, Tehran, Iran</p> <p style="text-align: center;">School of Computer Science, Institute for Research in Fundamental Sciences (IPM), Iran</p> <p>ABSTRACT--A wide range of real-world applications, including DSP, deep learning, multimedia, and scientific algorithms generally include fixed-point and floating-point arithmetic operations and trigonometric functions which have long latency and high power usage. In this paper, we propose a computation reuse mechanism for multicore processors that reuses the results of an arithmetic operation for subsequent operations with (approximately) the same operands. It adds a small so-called result cache to every</p>

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	<p>functional unit that keeps a few recent operands and their results to detect repetitive operands and reuse the results. Taking advantage of the value locality inherent in many real-world applications, our architecture relies on a multi-stage interconnection network to distribute input data elements across the cores of a multi-core processor in such a way that the data locality of each core is increased. This way, each core has higher computation reuse rate that translates to more power consumption reduction. Experimental results show that the proposed mechanism increases the result cache hit rate, which leads to a significant reduction in power consumption of arithmetic operations.</p>
<p>MM075 18:15-18:30</p>	<p style="text-align: center;">AGILE: Augmented GrId based cLustEring</p> <p style="text-align: center;">Amin Javidan, Reza Boostani</p> <p style="text-align: center;">Department of Computer Science & IT, Shiraz University Shiraz, Iran</p> <p>ABSTRACT--Clustering of large databases is still a challenge, especially with high dimensional inputs. Conventional clustering methods suffer from high sensitivity to noisy samples and bad initial conditions. To overcome the mentioned drawbacks, a new kernel-based method, termed as Augmented GrId based cLustEring (AGILE) is proposed. AGILE is designed to cluster large databases, regarding the number of attributes. It is an in-memory clustering algorithm which starts to partition the input space into small grids and tries to form arbitrary shaped clusters with eliminating outlier samples. Experimental results demonstrate the higher performance of AGILE in terms of computational complexity and accuracy compared to the other methods.</p>
<p>ET021 18:30-18:45</p>	<p style="text-align: center;">Development of a Five Domains Integrated Content-based EFL Curriculum for Pre-service Teacher Education: with Focus on Promoting Students' Interaction in English</p> <p style="text-align: center;">Hiroki Yoshida</p> <p style="text-align: center;">Kanto Gakuin University, Japan</p> <p>ABSTRACT--Elementary school teachers and secondary school English teachers in Japan are now facing a crucial reformation of the system of English education. The Japanese</p>

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	<p>Ministry of Education, Culture, Sports, Science, and Technology (MEXT) has announced a vision for a full-scale development of a new English education curriculum that is timed with the 2020 Tokyo Olympics. Elementary schools are to conduct English Language Activities classes one to two times a week for third and fourth graders, and to conduct English classes as a subject three times a week for fifth and sixth graders. Lower secondary schools are to teach English classes in English. The MEXT has also stipulated teacher training colleges to revise the “Courses of Study” and the pre-service teaching standard curriculum, and to integrate subjects related with English pedagogy into subjects related with specialized knowledge in English. Therefore, this study purposed to develop and examine the validity of a five domains integrated content-based language learning curriculum for pre-service English teacher education for Japanese university students.</p>
ET037-A 18:45-19:00	<p>A Guideline for Enhancing Reasonable Inclusion of Students with Disabilities in Academic Programmes of a Tertiary Institution in Limpopo Province, South Africa</p> <p style="text-align: center;">Augustine Kwame Tugli</p> <p style="text-align: center;">University of Venda, South Africa</p> <p>ABSTRACT--The passing of the Promotion of Equality and Prevention of Unfair Discrimination Act Number 4 of 2000 in South Africa has not only recognised the rights of persons with disabilities but also prohibits failure to eliminate obstacles that unfairly limit or restrict them from enjoying equal opportunities or failing to take steps to reasonably accommodate the needs of such people.</p> <p>This study developed a guideline that sought to promote the academic inclusion of students with disabilities in a tertiary institution. A quantitative design was followed in collecting and analysing data on the needs and challenges of the target population. Among the findings were poor understanding and management of disability issues, poor curricular delivery and assessment approaches and lack of support and resources for academic and extra academic programmes.</p>

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	<p>The developed guideline was, therefore, guided by key elements of the Social Model of Disability, as well as the Inclusive Model of Disability which served as theoretical frameworks of the study.</p>
<p>ET029-A 19:00-19:15</p>	<p>Web-Based and Blended-Learning Self-Regulatory Strategies of EFL Academic Writing: A Putative Model Development</p> <p>Ali Asghar Rostami Abu Saeedi, Hassan Soleimani and Saeed Kheiri</p> <p>Payame Noor University, Iran</p> <p>ABSTRACT--This investigation intended to explore and model the web-based and blended-learning writing strategies which may be conducive to the self-regulation of Iranian EFL learners in their writing achievement. To this end, grounded theory was regarded as the methodological design of the study, based on which 94 Iranian EFL teachers and professors from diverse institutes and universities were interviewed. Also, the interviews were triangulated with some document analyses, observations, and field notes. The collected data were analyzed through the three coding processes in grounded theory, i.e. open, axial, and selective coding. Results included some web-based strategies which can Iranian EFL learners take into account in order to become academic writers, some web-based strategies which can put Iranian EFL learners into the self-regulated learning frame, and some web-based strategies through which Iranian EFL learners can become self-regulated academic writers. The entire analyzed data were modeled and put into a putative frame.</p>
<p>ET007-A 19:15-19:30</p>	<p>Boosting “mulliteracies” through digital stories</p> <p>Victoria Zenotz</p> <p>Public University of Navarre, Spain</p> <p>ABSTRACT--Being literate nowadays does not just refer to the skills to read and write on paper. It also implies dealing with the input learners encounter through the different technologies, particularly the Internet, analysing it and transforming it so that they will create a new output. This new context is also multimodal since the interpretation,</p>

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	<p>transformation and creation of images, video and sounds are very often as important as doing it with words. For this reason, we are using the term “multiliteracies”, which, apart from designing this variety in the mode of the presentation of the information, also makes reference to the different languages and cultures. The way to develop these “multiliteracies” is taking part in real social practices in the classroom, in our case, the creation of digital stories. The first part of the presentation tackles theoretical notions such as literacy and “multiliteracies”. A longitudinal study carried out at a secondary school in the north of Spain (2012-2016) will be described. With the aim of improving their literacy level in English a “multiliteracy pedagogy” At the different stages of the learners creative process data was collected. Its analysis provided some valuable insights into learners’ literacy progress.</p>
MM067 19:30-19:45	<p>A Personalized Learning Recommendation System Architecture via a Learning Management System</p> <p>Thoufeeq Ahmed Syed, Vasile Palade, Rahat Iqbal, Smitha Sunil Kumaran Nair Middle East College, Oman</p> <p>ABSTRACT--The information on the web is ever increasing and it is becoming difficult for students to find appropriate information or relevant learning material to satisfy their needs. Technology Enhanced Learning (TEL) is an area which covers all technologies that improve students learning. Effective Personal Learning Recommendation Systems (PLRS) will not only reduce this burden of information overload by recommending the relevant learning material to the students of their interest, but also provide them with “right” information at the “right” time and in the “right” way. In this paper, we first present a detailed analysis of existing TEL recommendation systems and identify the challenges that exist for developing and evaluating the datasets. Then, we propose an architecture for developing a PLRS that aims to support students via a Learning Management System (LMS) to find relevant material in order to enhance student learning experience. Finally, we also present some future challenges and a roadmap for developing TEL PLRSs.</p>

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Session IV Information education and management

Time 17:30-19:45

Location Hall Perov/3rd Floor

Chaired by *Prof. Renat Letfullin, Rose-Hulman Institute of Technology,*

USA

PAPER ID

ET003-A ET006 ET023-A ET2001-A ET030-A ET032-A ET034 ET026-A

ET3003-A

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ET003-A 17:30-17:45	<p data-bbox="549 367 1211 398">For better or for worse- Technology's impact on education</p> <p data-bbox="774 432 986 459">Abaida Mahmood</p> <p data-bbox="624 495 1136 521">Qurban & Surraya Educational Trust, Pakistan</p> <p data-bbox="378 557 1382 2016">ABSTRACT--Fifteen years ago, Twitter & Facebook didn't exist. Ten years before that, we didn't have the Web. Students don't ask their teachers, they google and wikiped. So who knows what the future of education will be like a decade from now? When we look to the future we are confronted with many uncertainties about the world our children will live in. Our children are the adults of the future and we must take the time to understand and share their world now. It is already clear that their early formative years will be dominated by technology in a way that will influence how they will lead their lives as teenagers and adults. Youngsters today are completely different than previous generations (physically and neurologically). All of the research shows that the brains of the digital generation are changed physically and chemically; they are wired differently than we are and interact with content differently (hyperlinked mind - Neuroplastic)....constantly creating new thinking patterns vs. being primarily set in stone at early age. Images processed 60,000 x faster than text and they read differently than older generations. As professional educators, we need to determine HOW to work most effectively with this new type of student and how to prepare them for future jobs. Our society and our educational institutions need to consider the impact of technology wisely. We need to try to understand how growing up with technology will affect the future relationships that our children will have with the rest of the world. This paper examines how technology is shaping the future of education and raises several questions like: How much will technology affect how they learn and process information? How will the digital generation acquire the skills to interact with older people and into the workplace? And how will the educational institutions adapt to our digital generation? We as educators need to be vigilant in transforming the learning environments because we not only want an ingenious generation but one who can also uphold ethics, morals and</p>
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	values that will enable them to live in harmony and peace with the rest of the world.
ET006 17:45-18:00	<p>Exploring the Awareness and Use of Web 2.0 Tools by the First Year Information Science Students, Walailak University, Thailand</p> <p>Suthanya Doung-In</p> <p>Walailak university,Thailand</p> <p>ABSTRACT--The purpose of this paper was to explore the awareness and use of Web 2.0 tools by the first year Information Science (IS) students at Walailak University (WU), Thailand. The first year IS students at WU, who enrolled an Information Literacy course in the first semester, 2013 academic year, were identified as the population of this study. Two hundred and six undergraduates completed a questionnaire of this study. The results showed that the first year IS students of WU were quite familiar with some of Web 2.0 tools, such as Social networking sites, Instant messaging, Blogs, Social bookmarking and Wikis, while they were not familiar with tools, such as RSS feeds, Podcast, and Flickr. Walailak University should take advantage of Web 2.0 technologies to enhance learning of the Net generation or digital natives. Based on these findings, the study recommended the integrating a unit of Web 2.0 tools in curricula, providing a unit of Web 2.0 tools in Print and incorporating a unit of Web 2.0 tools in Social Network to improve the Information Science student skills for future information professionals.</p>
ET023-A 18:00-18:15	<p>The Influence of Introducing 3D Printing to an Industrial High School Course on Students Spatial Ability</p> <p>Hao-Chang Lo and Jih-Sheng Lo</p> <p>National Taichung University of Education, Taiwan</p> <p>ABSTRACT--With rapid development of the technological evolution of three-dimensional (3D) printers, 3D printing has become a popular and powerful tool not only in industry but also in our daily life. 3D printing allows the students to transfer their ideas into reality and to physically and quickly examine their projects in educational field. This study aims at introducing 3D printing into industrial high school casting course and investigating the</p>

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	<p>influence on student spatial ability. A total of 33 (28 males and 5 females) high school design-related students, with average age of 17, participated in this study. Students had to create miniature version of themselves though 3D scanning for reverse engineering (RE), 3D modeling, and 3D printer. Quantitative methods and judgment sampling were adopted. A 37-item spatial ability test with two subscales, namely spatial orientation and spatial orientation, was used to assess student spatial ability. The KR-20 reliability coefficient for the entire scale was .848. A paired-samples t-test was conducted to compare scores of spatial ability test before and after learning. There was a significant difference in the scores for pre-test (M= 26.39, SD=8.51) and post-test (M=29.33, SD=5.67); $t(32) = 2.074, P = .046$. This result released that student spatial ability was improved after the course learning of introducing 3D printing.</p>
<p>ET2001-A 18:15-18:30</p>	<p>Student teachers and technology: YES in daily life, NO in lesson plans. How can we alter this situation?</p> <p style="text-align: center;">Atar Ozand and Dina Tsybulsky</p> <p style="text-align: center;">Kibbutzim College of Education, Israel</p> <p>ABSTRACT--Human society in undergoing radical changes, and many scholars of philosophy, sociology, anthropology, psychology and education attribute these changes to the “digital revolution”. This revolution, which is affecting people’s existential and cultural environments is creating new social orders and new types of relationships between people and between them and their environment (Suarez-Orozeo & Qin-Hilliard, 2004). Moreover, this revolution is actually changing people’s lifestyle and behavior, how they absorb information, and how they think (Feenberg, 2010). However, a substantial gap exists between the great potential inherent in the digital revolution and the implementation of digital learning in schools today (Ertmer, Ottenbreit-Leftwich, & Tonduer, 2015; Kim, Kim, Lee, Spector & DeMeester, 2012). The Israeli Ministry of Education invests substantial efforts in integrating technology into the education system; yet despite such efforts, this integration does not seem to have fulfilled its potential</p>

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	<p>(Avidov-Ungar & Magen-Nagar, 2014).The aim of the current study is to examine the training of student teachers in Israel in integrating technology into their actual teaching; whether and at what level preservice science teachers actually integrate digital technologies into their practicum work. The methodological approach is that of the case study, with data gathering involving the examination of lesson plans and class observation. Data analysis was conducted using the Substitution Augmentation Modification Redefinition [SAMR] model. SAMR represents the evolution of new technology in education. It begins with replicating a current practice (Substitution), and continues with utilizing technology to provide an improvement (Augmentation), the application of technology for significant task redesign (Modification), through to the appearance of new technological phenomena that were previously impossible with pre-existing technologies (Redefinition) (Puentedura, 2013).</p>
<p>ET030-A 18:30-18:45</p>	<p style="text-align: center;">Development of Mobile Application Prototype based on the Tool for Analyzing the Instructional Conversation</p> <p style="text-align: center;">Woojin Han and Sangsoo Lee</p> <p style="text-align: center;">Pusan National University, South Korea</p> <p>ABSTRACT--The aim of this research is to develop a mobile application prototype for the tool used to analyze the instructional conversation. The major research tasks of the study are suggested as follows: first, to develop the tool for analyzing instructional conversation; second, develop the mobile application prototype. For this, first, deduced the implications through analysis problems of existing tools; second, developed the tool for analyzing instructional conversation by referring to literature; third, tested reliability, validity and applicability through reviewing by experts and pre-users; fourth, deduced design principles of mobile application tool by referring to literature about mobile application; fifth, developed mobile application tool based on design principles and completed with expert review and formative assessment. The results have the following meanings. First, making easier to instructional analysis. Second, feedback was analyzed</p>

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	<p>in context of conversation. Third, students were interpreted as more active subjects in class.</p>
<p>ET032-A 18:45-19:00</p>	<p>The Development of Interactive Application Prototype for Adaptive Instruction</p> <p>Hyun Ji Kim and Sangsoo Lee</p> <p>Pusan National University, South Korea</p> <p>ABSTRACT--These days, various educational applications have been developed and are often used as learning media. It is possible to use adaptive instruction as teaching-learning method due to advances in technology and internet. Many educational applications are currently used for supporting instruction. However, the existing educational application didn't satisfy the needs of learners and the way of feedback presentation given after the learning is pretty simple.</p> <p>The purpose of this study is to develop the application prototype for facilitating interactions in adaptive instruction. Research questions are as follows.</p> <p>First, a variety of theories and practices related application for active interactions in adaptive instruction were investigated through literature review. Also case study of the existing educational application and needs analysis for elementary school student and teacher conducted. The design principle interactive application prototype for adaptive instruction were developed as the results of literature review, case study and needs analysis. Second, the interactive application prototype for adaptive instruction was developed. Third, the formative evaluation was conducted to verify the validity of the application. The application was corrected and improved based on the formative evaluation results. Then, the interactive application prototype for adaptive instruction was developed finally.</p>
<p>ET034 19:00-19:15</p>	<p>How to Enhance Digital Literacy Skills among Information Sciences Students</p> <p>Siriwatchana Kaeophanuek, Jaitip Nasongkhla and Prachyanun Nilsook</p> <p>Chulalongkorn University, Thailand</p> <p>ABSTRACT--This research aims to study Thai university library and information sciences</p>

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	<p>instructors' and students' opinions on teaching and learning environments for the development of digital literacy skills. The research tools included digital literacy self-assessment and in-depth interviews. The findings indicate that 400 students from across Thailand considered their abilities for digital tools usage good and that they considered their information and digital transformation skills to be at an intermediate level. Interviews with the instructors revealed information about teaching environments, problems and obstacles, and the interviews indicated alternative methods for Information Sciences students' digital literacy development.</p>
ET026-A 19:15-19:30	<p>Involvement Load Hypothesis and Technique Feature Analysis in English Vocabulary Acquisition</p> <p>Manoochehr Jafarigohar, Hassan Soleimani and Mahboubeh Rahmanian Payame Noor University, Iran</p> <p>ABSTRACT--Vocabulary learning has always been a great concern and attracted the attention of many researchers since vocabulary learning is the key to communication and can help learners develop their other skills in language learning. Among the vocabulary learning hypotheses, involvement load hypothesis and technique feature analysis have been proposed which attempt to bring some concepts like noticing, motivation, and generation into focus. In the current study, 90 high proficiency EFL students were categorized into three vocabulary tasks of sentence making, composition, and reading comprehension in order to examine the power of involvement load hypothesis and technique feature analysis frameworks in predicting vocabulary learning of the learners. The participants in each group completed the vocabulary tasks based on incidental learning. The first group needed to write some original sentences giving ten words (Task A) and the second group needed to write a composition with the words (Task B). It was unraveled that involvement load hypothesis can not be a good predictor, and technique feature analysis is a good predictor in pretest to posttest score change and not in during task activity. In general, higher multiple regression indicates that the two vocabulary</p>

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	<p>frameworks are not good predictors of leaning for the learners. Composition tasks with the highest generation component in technique feature analysis model was proved to be better in vocabulary gain and resulted in a deeper relationship between form and meaning. The implications of the results will be discussed in the light of preparing vocabulary tasks.</p>
ET3003-A 19:30-19:45	<p style="text-align: center;">Fostering Entrepreneurial Mindset in Engineering Education</p> <p style="text-align: center;">Renat Letfullin and Scott Kirkpatrick</p> <p style="text-align: center;">Rose-Hulman Institute of Technology, USA</p> <p>ABSTRACT--US News & World Report Best Colleges has ranked Rose-Hulman Institute of Technology (RHIT) number one engineering school in United States for 18 years in a row. RHIT is offering a wide spectrum of engineering programs and courses. We propose to enhance the entrepreneurial training in nanotechnology program offered by RHIT for Engineering Physics majors, and show the wealth of opportunities available to the students in the area of nanotechnology. Within this broad subject, there are many entrepreneurial opportunities that our students could be uniquely positioned to take advantage of that could have significant impact on society. To further develop and encourage students to seek out and take advantage of these opportunities, we propose to enhance the student experiences by developing three changes to the program. First, we intend to modify the lab experiences to be more open ended to allow students to develop their own solutions, subject to appropriate constraints, instead of following a pre-determined process. Second, we intend to develop a component of the class to focus on entrepreneurship as a profession. Finally, we intend to enhance the interest and excitement in nanotechnology and entrepreneurship by linking topics to current applications in the world.</p>

