

ICIT 2023

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ICIT 2023 Special Session Proposal

Title of the Proposal:

Applying Innovative use of Block Chain Technology, Security Concepts and Forensics in E-Learning and Remote Education for Industry and Academia

Technical Outline of the Session and Topics:

Outline of the Session:

As education is transforming at a fast pace into hybrid and full digital learning systems many new challenges related to security, privacy and trustability of the platforms and networked laboratories start to appear. These challenges require a rethinking of the basic concepts used to create e-learning systems and remote education systems. Inclusion of advanced methods like block chains, security and privacy preserving algorithms and methods to have an integrated forensics implementation are of utmost importance. Papers with new experiments, system architectures, validation studies, proof of concepts and theoretical papers that lead us to new insights are solicited for this special session.

Topics of the Session:

- *Security challenges of E-Learning and Remote Education Systems*
- *Applications, theories and principles of Privacy Preservation for E-Learning and Remote Education*
- *Applications, theories and principles of Trusted and Secured Systems for E-Learning*
- *Applications, theories and principles of trusted and secured Gamification of Learning systems*
- *Applications, theories and principles of trusted and secured sensor systems for e-learning*
- *Applications, theories and principles of Block chain technologies in education*

- *Theories, algorithms and principles on secure and trusted use of peer to peer technologies in (remote) education*
- *On the security, privacy and trustability issues of peer to peer systems for education management systems.*

IEEE IES Technical Committee Sponsoring the Special Session (if any):

TC Education

Short bio and contact details of the Session Organizers

- *Organizer 1: Prof. dr. Abdellah Touhafi*

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Abdellah Touhafi is professor at the Engineering Sciences Faculty of the Vrije Universiteit Brussel. As a member of the Engineering technologies department, he is responsible for the major courses related to electronics design, embedded computing and reconfigurable computing. He is heading the Electronics and ICT group within the department and is heading the RAPPTOR research lab. His research interests are embedded security, smart and industrial electronics, reconfigurable computing systems, multi-sensorial systems and cloud computing. He applies this research within 3 emerging application fields that are advanced environmental monitoring systems, smart cities development and digital education. He is serving as an editor for the Journal of Sensors and the Journal of Remote Sensing (MDPI). He is serving as the chair for the P2834 standard on Secure and Trusted Learning Systems. He is General chair of several conferences related to smart cities (SCIS 2020), cloud computing (Cloudtech 2016, Cloudtech 2018, Cloudtech 2020) and industrial electronics (IECON 2022). His work has been published in more than 150 peer reviewed scientific publications as Journal papers, conference papers or book chapters.

- *Organizer 2: Prof. dr. Kazuhiro Umetani*

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Kazuhiro Umetani received the M. and Ph. D. degree in geophysical fluid dynamics from Kyoto University, Kyoto, Japan in 2004 and 2007, respectively. In 2015, he received the second Ph. D. degree in electrical engineering from Shimane University, Japan. From 2007 to 2008, he was a Circuit Design Engineer for Toshiba Corporation, Japan. From 2008 to 2014, he was with the Power Electronics Group in DENSO CORPORATION, Japan. From 2014 to 2020, he was an Assistant Professor at Okayama University, Okayama, Japan. From 2020 to 2021, he was an Associate Professor at Tohoku University, Miyagi, Japan. From 2021, he is currently an Associate Professor at Okayama University, Okayama, Japan. His research interests include new circuit configurations in power electronics and power magnetism for vehicular applications.

- *Organizer 3: Prof. Larisa Dunai
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Larisa Dunai, Associate Professor at UPV, obtained her MSc degree in Electronic Engineering in 2003 from Technical University of Moldova and a Master degree in Electronic Engineering in 2004 at the same university. After obtaining the MSc degree joined the Technical University of Moldova as Assistant professor at the Radio electronics and Telecommunications Department. In 2007 she started working as a researcher in the Research Center in Graphic Technology (CITG) of the Universidad Politecnica de Valencia. At the first, she worked in the domain of Matroid codes. After starting the work in the CITG, she focused her research interests in acoustics and cognitive systems and their applications. In November 2008 she joined the UPV as an Assistant professor of Graphic Design Department. In 2010 obtained her PhD at Universitat Politècnica de València. In 2013 she received the MIT Innovators Award for Spain and in 2014 the Michael Richey Medal from Royal Institute of Navigation. From 2020 is the Chair of the Technical Committee of Education in Engineering and Industrial Technologies

- *Organizer 4: dr. Meriem Thabet
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Dr.Meriem Thabet is a lecturer at Constantin university where she is mainly researching innovative communication and network architectures for end-to-end trustability of information chains in health, education and industry.