

IEEE EDUCON 2023

IEEE Global Engineering Education Conference

Salmiya, Kuwait || 1-4 May 2023 || American University of Kuwait

EDUCON 2023 CONFERENCE PROGRAM

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2023.ieee-educon.org

Table of Contents

Welcome Message	2
2023 Organizing Committee.....	3
2023 Steering Committee	4
Technical Reviewers.....	5
Organizers.....	7
Premier Sponsors	7
Official Airline Carrier	7
Platinum Sponsors	8
Technical Sponsor	8
Tutorials	9
Workshops.....	10
Keynotes	11
Technical Program.....	13
Monday, May 1, 2023.....	13
Tuesday, May 2, 2023.....	14
Wednesday, May 3, 2023	25
Thursday, May 4, 2023	35

Welcome Message

On behalf of the IEEE Education Society, Welcome to EDUCON 2023!

This year marks the 14th IEEE EDUCON conference which rotates annually between Europe, Africa, and the Middle East. This truly global forum, organized this year by the American University of Kuwait (AUK), brings together a number of academic leaders, university professors, STEM teachers, government representatives and industry partners under one forum. In addition to the main conference, EDUCON 2023 features a 3-day Exhibition by our platinum sponsors including MathWorks, ABET, and Binary Logic.

EDUCON 2023 is sponsored by KIPCO (premier sponsor), Burgan Bank (premier sponsor), and Gulf Insurance Company - GIG (premier sponsor), MathWorks (platinum sponsor), Binary Logic (platinum sponsor), along with Qatar Airways as the official carrier.

Kuwait has a strategic location at the crossroads of major trade routes which complements the foundation of the country as a hub for commerce and knowledge exchange. Kuwait boasts a well-educated population and a strong commitment to investing in research and development, which has resulted in a supportive environment for innovation and entrepreneurship that is fostered by numerous government initiatives. These efforts have helped Kuwait become a leader for startups in technology and modernization.

This year's program features 4 keynote lectures given by world-renowned experts, 9 special sessions, 3 round tables, 4 workshops, 4 tutorials, and over 30 full and work-in-progress paper sessions. The technical program includes 202 papers that underwent a double-blind review process. Considering a total number of 392 submissions, this resulted in a 52% acceptance rate.

The EDUCON 2023 conference gathers more than 150 participants from 64 countries on 5 continents. We are confident that EDUCON 2023 will prove to be an enriching educational and informative experience to all participants, as we continue to provide high-quality technical content with participation from engineering education leaders from all over the world.

Enjoy!



Mohammed El-Abd
Conference Chair
American University of Kuwait, Kuwait



Amir Zeid
Conference Chair
American University of Kuwait, Kuwait



Manuel Castro
Conference Chair
DIEECTQAI – UNED, Spain

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Tutorials

Monday, May 1st
15:00 – 16:30 AST

Metaverse for Engineering Education and Training

Instructor: Sajjad Hussain, *University of Glasgow*

Abstract: Metaverse is primed to find its applications in a wide range of sectors including manufacturing, healthcare, construction, social events, etc. Education, in particular, engineering education is expected to benefit from the metaverse to provide immersive, collaborative and engaging learner experiences. The studies have proved that student retention time and the learning rate is improved through the use of immersive technologies such as augmented and virtual reality. The element of social connection through the metaverse is supposed to further enhance student learning and experience. In this tutorial, we will present the background knowledge about the metaverse, the elements that make a metaverse, and the applications of the metaverse. The highlight of this tutorial will be the presentation of a case study in which we will present how we are using augmented reality, virtual reality and metaverse to train our students and researchers on state-of-the-art multimillion-pound equipment that has enabled remote and mass accessibility of these facilities. Towards the end, we will present some of the challenges faced by today's metaverse and share our vision for the future.

Monday, May 1st
15:00 – 16:30 AST

How to Gamify Your STEM Classes

Instructor: Darina Dicheva, *Winston-Salem State University*

Abstract: The low performance and drop-outs in STEM classes are frequently attributed to lack of student motivation and engagement. Meanwhile, gamification increasingly attracts the interest of educators due to its potential to foster motivation and behavioral changes in learning contexts. Accordingly, this tutorial will introduce the concept of gamification and its use in education based on OneUp Learning, a platform aimed at gamifying academic courses. OneUp is focused on encouraging students' out-of-class practice and increasing their overall engagement in a course through employing game design strategies and elements. The tutorial participants will gain practical knowledge on designing and implementing gamified courses.

Monday, May 1st
15:00 – 16:30 AST

Educational Recommender Systems

Instructor: Yong Zheng, *Illinois Institute of Technology*

Abstract: With the development of data science and artificial intelligence technologies, technology enhanced learning (TEL) became one of the promising areas in educational research and practice. Personalized learning and educational recommender systems, as a result, emerged as one of major contributions in TEL. Recommender systems (RecSys) have been widely applied in Internet applications, such as e-commerce (Amazon.com, eBay, etc.), online streaming (Youtube, Netflix, Spotify, etc.), social media (Facebook, Twitter, etc.). These applications have demonstrated the success of RecSys in assisting users' decision making and enhancing user experience by delivering a list of personalized recommendations. In the past decades, RecSys have also been introduced to the area of education, in order to deliver experience of personalized learning, recommend appropriate books/informal learning materials/after-school programs, balance the needs of multiple educational stakeholders (e.g., students, instructors, parents, publishers, etc.), and so forth. Due to the importance and success by RecSys in the area of educations, it is necessary to give such a tutorial at IEEE EDUCON conference and share the knowledge and experiences with the community of EDUCON. This tutorial will deliver background, motivations, knowledge & skills of educational recommender systems to the audience, as well as a summary of challenges and future work in this area.

Monday, May 1st
16:30 – 18:00 AST

Guidelines on Publishing in Engineering Education Journals

Instructor: Matthias Gottlieb, *Bayerisches Staatsministerium für Digitales*

Abstract: Learn more about scientific writing, especially how to publish an article in a top journal of engineering education. We present insights in structuring and clarifying a contribution in multiple dimensions. Together, we discuss and elaborate on all things you need to think about when writing your scientific contribution. The structure is just the basis. We go beyond structure and explain and guide in-depth to structure the content to make sure your paper presents scientific results with impact to the community. We advise a scientific paper's structure and what needs to be included in each section to meet the editors, reviews, and readers' expectations-going into details such as presenting figures and tables in an impactful, practical way. Tailoring your scientific contribution to the community of engineering education.

Workshops

Monday, May 1st
15:00 – 16:30 AST

Research and Publishing with the IEEE Education Society and TC-ILE: Knowledge Sharing and Networking Workshop for EduCon 2023

Instructor: Minjuan Wang, *San Diego State University*

Abstract: IEEE-TLT is one of the major journals sponsored by the Education Society; and the Technical Committee on Immersive Learning Environments (TC-ILE) is a new and growing community in the same society. The aim of this workshop is to connect the research and publishing community with the TLT journal and the TC-ILE community through knowledge sharing and networking activities. We propose to hold a 90-Minute Hybrid event during the main conference open for all EduCon 2023 participants. TC-ILE members and IEEE TLT editors are welcome to join and help facilitate this workshop. This workshop will zoom in on how to write and publish in indexed journals such as TLT. We will also introduce TC- ILE and working groups, to explore and initiate research and development collaborations.

Monday, May 1st
16:30 – 18:00 AST

Game-Based-Learning and Gamification in the Classroom

Instructor: Rasha Shalabi, *Kuwait Technical College*

Abstract: Have you ever struggled to get your students interested in your classroom? To get them engaged and pay attention to your lesson? Today's learners are very different from older generations; not only are they tech savvy but they also have short spans of attention if something isn't interesting to them. Gamification and Game-Based-Learning, can be very effective to increase motivation and engagement of learners in the classroom. Changing the traditional way of education is very challenging. Not only is it difficult to convince educational leaders that games and video games can serve as powerful educational tools, but also many educators don't know how to integrate games into their curriculum.

Monday, May 1st
16:30 – 18:00 AST

Educating Girls for STEM in the Global South - Strategies & Recommendations

Instructor: Brenda Nyaringita, *IEEE Young Professionals Kenya Section*

Abstract: Engineering education has nuances that require a balanced mix of talented teachers, learning resources and a supportive environment for learning. These factors become increasingly important in the global south where resources are limited hence affecting both talent and learning environment. Educators in these environments therefore have to do twice as much to accomplish effective STEM education for their learners, the students. The imbalance becomes more skewed when gender biases come into play for instance for the African girl child. Without a good foundational and relatable understanding of how circuits and systems factor into her daily life, the idea of Engineering becomes a distant thought. In this workshop, we share our experience and expertise on how to engage and bring out the engineer in the disenfranchised girl who may not have much of an opportunity to interact with engineering.

Monday, May 1st
16:30 – 18:00 AST

The Role of Intrinsic Motivation in Developing a Habit of Coding for cs1 Students

Instructor: Ghada Hassan, *Koding4Kinder*

Abstract: for cs1 Students

It is no doubt that in an era of digital transformation, computer programs are integral to society and business. Thus, Introductory programming courses (IPC) are now a mandatory part of most undergraduate programs. IPCs are usually challenging to some students, and high dropout rates are reported. The research community has addressed the problem extensively providing multidisciplinary improvisations in curriculum, pedagogical methods, cognitive aspects, supporting tools, and in designing assessments. Having a user-centered adaptive learning system, taking into consideration the individual needs and learning abilities of the student, can be the solution. However, the current state of knowledge and practice in this field is limited. In an attempt to fill in this gap, our aim is to develop what we call "The Habit of Coding": by getting students motivated to learn and work autonomously, losing their fears of coding. In other words, how can coding be a regular habit in the student's life that they motivate themselves to do and learn. We believe that having a habit of coding is the same as developing a habit in any other life skill, and it can suffer the same pitfalls. The aim of this workshop is to discuss the effectiveness of student-centered learning environments, tips and tricks to develop a habit of coding, and how to apply pink's theory of intrinsic motivation (Autonomy, Mastery, and Purpose) to developing programming skills.

Keynotes

Tuesday, May 2nd
10:40 – 11:20 AST



The Impact of Metaverse and Generative AI on Education

Instructor: Dr. Minjuan Wang, *Professor and Program Head, San Diego State University; Editor-in-Chief, IEEE Transactions on Learning Technologies (TLT)*

Abstract: Metaverse has been the trendy topics in global education since 2022. The Metaverse is considered the third wave of the Internet revolution, able to support persistent interconnected online 3D virtual environments (3DVE), and promising to bring new levels of social connection and collaboration. How to effectively design and use Metaverse in teaching and learning remains crucial for the development of effective learning experiences. Meanwhile, Generative AI such as ChatGPT entered the spotlight in 2023 and stirred conversations around the

world on its usage and “threats” to teaching, learning and training.

In this presentation, Dr. Wang will first showcase exemplary Metaverse technologies and learning platform, then share an Edu-Metaverse Ecosystem she published with her students and international collaborators. She will continue discussing the impact and implications of Generative AI on education. For example, how to effectively use Generative AI in various disciplines? In addition, she will also explore the ethical considerations of using AI in different educational settings.

Tuesday, May 2nd
11:20 – 12:10 AST



Preparing Engineering Students for Impactful Careers in Industry

Instructor: Mohammad Abuzayyad, *MathWorks*

Abstract: The keynote talk will discuss the challenges faced by deans and department heads in evolving engineering curriculum to meet the ever-changing needs of industry and students. It will showcase how MathWorks aligns as a university partner by developing teaching tools and resources that best help prepare students to seamlessly fit industry and research workflows. More specifically, the session will highlight MathWorks resources such as assignment auto-grading, online training courses, courseware, integrations with open-source software (OSS), student programs, and capstone projects, in a conversation about enabling educators to teach complex engineering concepts in an effective and engaging manner.

Wednesday, May 3rd
10:30 – 11:15 AST



Remote Laboratories for Engineering Education: Research, Practice and Standardization

Instructor: Johann Marquez-Barja, *IMEC & University of Antwerp*

Abstract: Prof. Marquez-Barja will present an overview of the current technical approaches for remote laboratories that enhance engineering education by providing laboratory facilities to experiment remotely and new skills to learners. While many solutions enable remote laboratories, the engineering education community has identified the need to embrace an interoperable approach to homogenize how such laboratories may operate. To address such a need, the IEEE Education Society, through its Standardization Committee, has been sponsoring the development of standards that aim to homogenize such technical approaches for implementing

and delivering remote laboratories in a secure and interoperable manner. In this Keynote, Prof. Marquez-Barja will also present the status of the already existing standards, such as the IEEE 1876-2019 Standard for Networked Smart Learning Objects for Online Laboratories, and ongoing efforts for new standards, such as IEEE P2834 – Standard for Secure and Trusted Learning Systems. Furthermore, the talk will present the remote laboratories approach that IMEC and the University of Antwerp have developed in Belgium utilizing high-performance testbeds, such as the Smart City and the Smart Highway located in Antwerp, to deliver remote laboratories in engineering education.

Wednesday, May 3rd
11:15 – 12:00 AST



Engineering in Place: The Role of Localized Expertise in Engineering Education

Instructor: Jennifer DeBoer, *Purdue University*

Abstract: The scope of forced displacement of communities around the world is huge and growing. The massive amount of migration, whether in emergency or protracted settings, often demands complex solutions to meet crucial community needs. When technical issues arise – for instance, a refugee camp needing an immediate and consistent source of power – solutions are often brought in from an external donor or humanitarian assistance provider. However, displaced communities have a wealth of knowledge and skills, especially about their individual and community needs and the potential knowledges and histories they bring. In this talk, I describe an alternative, co-created approach to providing authentic engineering learning through a framework called Localized Engineering

in Displacement. Grounded in principles of critical pedagogy and social justice, this framework is structured to integrate technical content, professional skills, and engineering design, all focused on needs identified by the local students themselves. I highlight the process and outcomes for our team, including the learners, teachers, and communities who share research, new teaching materials and approaches, and community solutions.

Technical Program

Monday, May 1, 2023

*All times appear in Arabian Standard Time (AST)

13:30 - 18:00

Tutorial Registration

Room: Symphony Style Hotel Ground Floor

15:00 – 16:30

T1: Metaverse for Engineering Education and Training

Sajjad Hussain, *University of Glasgow*

Room: Symphony Style Hotel, Room 9A

Session Chair: Sajjad Hussain

15:00 – 16:30

T2: How to Gamify Your STEM Classes

Darina Dicheva, *Winston-Salem State University*

Room: Symphony Style Hotel, Room 9B

Session Chair: Darina Dicheva

15:00 – 16:30

T3: Educational Recommender Systems

Yong Zheng, *Illinois Institute of Technology*

Room: Symphony Style Hotel, Room 10A

Session Chair: Yong Zheng

15:00 – 16:30

W1: Research and Publishing with IEEE Education Society and TC-ILE: Knowledge Sharing and Networking Workshop for EDUCON 2023

Minjuan Wang, *San Diego State University*

Room: Symphony Style Hotel, Room 10B

Session Chair: Minjuan Wang

16:30 – 18:00

W2: Game-Based-Learning and Gamification in the Classroom

Rasha Shalabi, *Kuwait Technical College*

Room: Symphony Style Hotel, Room 9A

Session Chair: Qammer Abbasi

16:30 – 18:00

W3: Educating Girls for STEM in the Global South - Strategies & Recommendations - CANCELLED

Brenda Nyaringita, *IEEE Young Professionals Kenya Section*

Room: Symphony Style Hotel, Room 9B

Session Chair: Iyad Abu Doush

16:30 – 18:00

W4: The Role of Intrinsic Motivation in Developing a Habit of Coding for cs1 Students

Ghada Hassan, *Koding4Kinder*

Room: Symphony Style Hotel, Room 10A

Session Chair: Amjad Hussain

16:30 – 18:00

T4: Guidelines on Publishing in Engineering Education Journals

Matthias Gottlieb, *Bavarian State Ministry for Digital Affairs*

Room: Symphony Style Hotel, Room 10B

Session Chair: Mounib Khanafer

Tuesday, May 2, 2023

*All times appear in Arabian Standard Time (AST)

07:00 – 18:00

Registration

Room: Symphony Style Hotel Ground Floor

8:30 – 10:00

SS1: Data Science Teaching Innovation in STEM Education

Room: Symphony Style Hotel, Room 9B

Session Chair: Takoua Jendoubi

8:30

A Personalised Support Centre for Mathematics in Engineering Adapted to Students Preferences, Knowledge and Needs

Anabela Gomes (Polytechnic Institute of Coimbra - ISEC & University of Coimbra, Portugal)

Maria Emília Bigotte de Almeida (Coimbra Institute of Engineering Polytechnic of Coimbra, Portugal)

8:48

Blockchain for Management of Virtual Internationalization in Higher Education

Abdallah Yusuf Al-Zoubi (Princess Sumaya University for Technology, Jordan)

Mamoun Aldmour, Mr (Staffordshire University, United Kingdom (Great Britain))

9:06

Digital Makerspace - a Tool With Multipurpose Use and Potential for Teaching and Others

Irene Rothe (Bonn-Rhine-Sieg University, Germany)

André Kless (Hochschule Bonn-Rhein-Sieg, Germany)

9:24

E-Learning Web Platform for Assembly Manufacturing Line

Dan Popescu and Loretta Ichim (University Politehnica of Bucharest, Romania)

Romeo Cojocaru (University Politehnica of Bucharest & Faculty of Automatic Control and Computer Science, Romania)

Cristian Dragana (University Politehnica of Bucharest, Romania)

9:42

Experiences With Low-To-Medium-Effort Hybrid Teaching

Axel Böttcher (Munich University of Applied Sciences, Germany)

8:30 – 10:00

SS2: Preparing the Future Engineer-Business Generalists Who Can Lead Technological, Economic and Social Change – PFEBG

Room: Symphony Style Hotel, Room 10A

Session Chair: Ghulam Hussain

8:30

Fostering an Ethical and HR Management Mindset for Tomorrow's Technologists

Epaminondas Epaminonda (University of Nicosia, Cyprus)

8:48

Teaching Business Skills in the Cloud: A Process Model for Cloud-Based Enterprise Software Integration in Higher Education

Sophie Heim (Technical University of Munich, Germany)

Lena Baur (Technical University of Munich, Germany)

Holger Wittges (Technical University of Munich, Germany)

Helmut Krcmar (Technical University of Munich, Germany)

9:06

Is Education Ready to Embrace Metaverse?

Despo Ktoridou (University of Nicosia, Cyprus)

9:24

Professional Skills and 21st Century Skills for Data Driven Digital Economy

Yuri Demchenko, Viktoriya Degeler and Ana Oprescu (University of Amsterdam, The Netherlands)

Steve Brewer (University of Lincoln, United Kingdom (Great Britain))

9:42

Social and Ethical Implications of Technology in Education

Epaminondas Epaminonda (University of Nicosia, Cyprus)

8:30 – 10:00

TS1: Assessment in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Sajjad Hussain

8:30

Automated Evaluation System for Microcontroller Assignments

Fabian Steiner (University of Applied Sciences Technikum Wien, Austria)

Bernhard Lueger (University of Applied Sciences Technikum Wien, Austria)

Bernhard Wallisch, Dipl.-Ing. (University of Applied Sciences Technikum Wien, Austria)

Thomas Polzer (University of Applied Sciences Technikum Wien, Austria)

8:48

Effects of Students' Written Assignments' Grading on Tutors' Evaluation: An Investigation in Open and Distance Education

George Vorvilas (Hellenic Open University & School of Humanities, Greece)

Alexandros Liapis (Hellenic Open University & School of Science and Technology, Greece) Nikolaos Karousos (Hellenic Open University, Greece)

Achilles Kameas (Hellenic Open University & Computer Technology Institute, Greece)

9:06

Failure Rates in Maths and CS1: Are They Associated?

Maria Emília Bigotte de Almeida (Coimbra Institute of Engineering Polytechnic of Coimbra, Portugal)

Anabela Gomes (Polytechnic Institute of Coimbra - ISEC & University of Coimbra, Portugal)

João Branco (Polytechnic Institute of Coimbra, Portugal)

Carla Fidalgo (ISEC, Portugal)

Luis Melo (Coimbra Institute of Engineering Polytechnic of Coimbra, Portugal)

9:24

Robotics Primer for Independent Learners: Background, Curriculum, Resources, and Tips

Rafay Aamir Gull (Information Technology University, Pakistan)

Mohamed Daniel Bin Mohamed Izham (Qatar University, Qatar)

Junaid Qadir (Qatar University, Qatar)

9:42

Engineering Education in the Era of ChatGPT: Promise and Pitfalls of Generative AI for Education

Junaid Qadir (Qatar University, Qatar)

8:30 – 10:00

TS2: Attracting, Engaging and Retaining Human Talent to Engineering

Room: Symphony Style Hotel, Room 10B

Session Chair: John Avaritsiotis

8:30

Impact of Smartphone-Based Interactive Learning Modules on Cybersecurity Learning at the High-School Level

Sai Sushmita Sudha (The University of Toledo, USA)

Jyothi Priyanka Bandreddi (University of Toledo, USA);

Laxmi Mounika Podila (University of Toledo, USA)

Ramesh Govindula (Purdue University Northwest, USA);

Austin Richardson (Purdue University Northwest, USA);

Quamar Niyaz (Purdue University Northwest, USA)

Xiaoli Yang (Fairfield University, USA)

Ahmad Y Javaid (University of Toledo, USA)

8:48

Measuring Students' Ethical Competencies During Industrial Internships

Patricia Jimenez (Pontificia Universidad Catolica de Valparaiso, Chile)

Jimena Pascual (Pontificia Universidad Catolica de Valparaiso, Chile)

Pamela Wilson (Pontificia Universidad Catolica de Valparaiso, Chile)

9:06

Performance and Attrition in Information Technology Studies; A Survey of Students' Viewpoints

Outi Tuulia Virkki (Haaga-Helia University of Applied Sciences, Finland)

9:24
Towards a Consensus of Expected Student-Advisor Responsibilities in Engineering Capstone Projects
Hamad Al Jassmi (United Arab Emirates University, United Arab Emirates)
Salini Krishnan (United Arab Emirates University, United Arab Emirates)
Luqman Ali (UAE University, United Arab Emirates)
Babitha Philip (UAE University, United Arab Emirates)

8:30 – 10:00
TS3: Assessment in Engineering Education
Room: Symphony Style Hotel, Room 11A
Session Chair: Seyed Esmaeili

8:30
Electrician Career Guidance Based on Integration Multi-Modal Learning and Recreational Activities for Grade 8 Student
Adisron Bunkerd (King Mongkut's University of Technology Thonburi, Thailand)
Komkrit Chomsuwan (King Mongkut's University of Technology Thonburi, Thailand)
Wuttiporn Suamuang (King Mongkut's University of Technology Thonburi, Thailand)

8:48
Human Capital as the Basis for the Professional Expectations Formation of Technical University Students
Maria Kunyayeva (Bauman Moscow State Technical University, Russia)
Nadezhda Opletina (Bauman Moscow State Technical University, Russia)

9:06
Online Learning Path Recommender System for MOOCs
Asra Khalid (Victoria University of Wellington, New Zealand)
Karsten Lundqvist (Victoria University of Wellington, New Zealand)
Anne Yates (Victoria University of Wellington, New Zealand)
Muhammad Awais Azam (School of Information Technology Whitecliffe, New Zealand)

9:24
The Role of Universal Design for Learning in Inclusive Engineering Education Programs for Hearing Impaired Students
Olga Oreshkina (Bauman Moscow State Technical University, Russia)
Yulia Safonova (Bauman Moscow State Technical University, Russia)

9:42
Work in Progress: Simplified and Inexpensive Integrated Simulation and Hands-On Experiments in Teaching Electronics Instrumentation and Measurement Laboratory Course
Ikechi Augustine Ukaegbu (Nazarbayev University, Kazakhstan)
Elochukwu Onyejebu (Nazarbayev University, Kazakhstan)
Francis Nwose Mokogwu (Nazarbayev University, Kazakhstan)
Refik Caglar Kizilirmak (Nazarbayev University, Kazakhstan)

10:00 – 10:30
Coffee Break/Exhibits
Room: Symphony Style Hotel, 9th and 10th Floor

10:30 – 10:40
Opening Session
Rawda Awwad, *President, American University of Kuwait (AUK)*
Magdalena Salazar Palma, *IEEE Region 8 Past Director*
Eman Al-Awadhi, *Group Senior Vice President, Corporate Communications & IR, KIPCO – Kuwait Projects Co.*
Room: AUK Theater

Session Co-Chairs: Amir Zeid and Edmundo Tovar

10:40 – 11:20
Keynote: The Impact of Metaverse and Generative AI on Education
Minjuan Wang, *Professor and Program Head, San Diego State University; Editor-in-Chief, IEEE Transactions on Learning Technologies (TLT)*
Room: AUK Theater

Session Co-Chairs: Amir Zeid and Edmundo Tovar

11:20 – 12:00

Keynote: Preparing Engineering Students for Impactful Careers in Industry

Mohammad Abuzayyad, *MathWorks, Italy*

Room: AUK Theater

Session Co-Chairs: Amir Zeid and Edmundo Tovar

12:30 – 13:30

Round Table: Metaverse in Education

Baltasar Fernandez Manjon, *Universidad Complutense de Madrid*

Minjuan Wang, *San Diego State University*

Room: AUK Theater

Session Co-Chairs: Johann Marquez-Barja and Mohammed El-Abd

13:30 – 15:00

Lunch

Room: Symphony Style Hotel

15:00 – 16:30

SS3: Pre-University STEM Outreach: Igniting Interest in STEM in Young Students

Room: Symphony Style Hotel, Room 9B

Session Chair: Habib Kammoun

15:00

STEM Outreach Activities for Pre-University Generation to Be Performed by the Extra-Curriculum Project Team of Undergraduate Students

Makoto Hasegawa (Chitose Institute of Science and Technology, Japan)

15:18

Assessment of Data Types and of the Ways They are Used in Scratch Using the SOLO Taxonomy

Theodoros Karvounidis (University of Piraeus, Greece)

Anastasios Ladias (Ministry of Education, Greece)

Christos Douligeris (University of Piraeus, Greece)

15:36

Work in Progress: Enhancing Digital Transformation Awareness of Female International Business Freshmen Students

Martin Zagar (RIT Croatia, Croatia)

Jasminka Samardzija (RIT Croatia, Croatia)

Maja Vidovic (RIT Croatia, Croatia)

Branko Mihaljevic (RIT Croatia, Croatia)

15:54

An Explorative Case Study on the Effects of a Makeathon for SDGs on Middle School Students Learning and Democratic Empowerment

Gayathri Manikutty (Amrita Vishwa Vidyapeetham, India)

Pranav Prabha (Amrita Vishwa Vidyapeetham, India)

Mahesh S Unnithan (Amrita Vishwa Vidyapeetham, India)

E A Ayisha (Federal Institute of Science and Technology (FISAT), India)

Sreejith Sasidharan (Amrita Vishwa Vidyapeetham, India)

15:00 – 16:30

SS4: Inclusion and Diversity in Engineering Education (IDEE)

Room: Symphony Style Hotel, Room 10B

Session Chairs: Christos Douligeris

15:00

Artificial Intelligence for Defence in an EQF6 Training and Education Program, From the Design to the Execution

Eric J. Grivel (Université de Bordeaux, France)

Baptiste Pesquet (Bordeaux INP, France)

Tudor-Bogdan Airimitoie (University of Bordeaux, France)

Akka Zemmar (University of Bordeaux, France)

15:18

Broadening Diversity and Inclusion in Higher Engineering and Computing Education Through an OOICCI Model

Yanru Xu (University of Chinese Academy of Sciences, China)

Ji-an Liu (University of Chinese Academy of Sciences, China)

Yaxuan Wen (University of Chinese Academy of Sciences, China)

15:36

Changes in High-School Student Attitude and Perception Towards Cybersecurity Through the Use of an Interactive Animated Visualization Framework

Sai S Sudha (The University of Toledo, USA)

Gabriel A Castro Aguayo (Purdue University Northwest, USA)

Abel R Angulo (Michigan Technological University, USA)

Jyothirmai Kothakapu (The University of Toledo, USA)

Quamar Niyaz (Purdue University Northwest, USA)

Xiaoli Yang (Fairfield University, USA)

Ahmad Y Javaid (University of Toledo, USA)

15:54

Design Approach Centered on the Activity or the Learning Situations: For a Learner-Centered Learning Environment (LCLE)

Aminata Wague (Université Iba Der Thiam de Thiès, Senegal)

Mamadou Bousso (Université de Thiès, Senegal)

Laurence Capus (Laval University, Canada)

16:12

Disciplines Go Digital - Developing Transdisciplinary Study Programs That Integrate AI With Non-IT Disciplines

Veronika Thurner (Hochschule München University of Applied Sciences, Germany)

Gudrun Socher (Hochschule München University of Applied Sciences, Germany)

15:00 – 16:30

TS4: Remote Labs and Labs Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Johann Marquez-Barja

15:00

Impact of Remote Labs in Preparing Students for Work 4.0

Abdallah Yusuf Al-Zoubi (Princess Sumaya University for Technology, Jordan)

Manuel Castro (Spanish University for Distance Education - UNED, Spain)

Fadi Shahroury (Princess Sumaya University for Technology, Jordan)

Elio Sancristobal (Spanish University for Distance Education - UNED, Spain)

15:18

Remote Labs in Electrical Engineering to Address Heterogeneous Student Competencies in Undergraduate Engineering Education

Brit-Maren Block (Leuphana University of Lüneburg, Germany);

Benedikt Haus (Leuphana University of Lüneburg, Germany);

Torge von Geyso (Leuphana University of Lüneburg, Germany)

Anton Steenken (Albus Vision, Germany)

15:00 – 16:30

TS5: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 10A

Session Chairs: Aurelia Ciupe

15:00

Smart Campus Selection Criteria - Using AHP Analysis

Vian S Ahmed (American University of Sharjah, United Arab Emirates)

Sara Saboor, Norita Ahmad (American University of Sharjah, United Arab Emirates)

Megan Ghaly (American University of Sharjah, United Arab Emirates)

15:18

Using Randomized Controlled Trials in eLearning: How to Add Content A/B Tests to a MOOC Environment

Christiane Hagedorn (Hasso Plattner Institute for Digital Engineering, Germany)

Dominic Sauer (Hasso Plattner Institute, Germany)

Jan Graichen (Hasso Plattner Institute, Germany)

Christoph Meinel (Hasso Plattner Institute, University of Potsdam, Germany)

15:36

Restoring the Prestige of Engineering Education Through an Engineering-Led Digital Transformation of Economic Science

Stefan Stefanov (Foundation Information Technologies and the Future of Economic Science & ISEE JSC, Unitraf JSC, Bulgaria)

Trifon Stefanov (Institute for Systemic Economic Engineering, Bulgaria)

15:54

Virtual and Augmented Reality for Digital Medicine - Design and Implementation of a Hybrid, Interdisciplinary Course for Engineering and Medical Students

Tanja Joan Eiler (University of Siegen, Germany)

Vanessa Schmücker (University of Siegen, Germany)

Christian Gießler (University of Siegen, Germany)

Rainer Brück (University of Siegen, Germany)

16:12

Social Media to Improve Argumentative Skills for Engineering Students: A Qualitative Analysis From Students' Perspective

Abel Flores (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)

Gibrán Sayeg-Sánchez (Tecnológico de Monterrey, Mexico)

Adriana Amozurrutia-Elizalde (Tecnológico de Monterrey, Mexico)

Hugo G. Gonzalez-Hernandez (Tecnológico de Monterrey, Mexico)

Chrys L.A. Torres-Bautista (Tecnológico de Monterrey, Mexico)

15:00 – 16:30

TS6: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Jibran Yousafzai and Ruth Cobos

15:00

Emotional Tool Design: A Perspective on How to Generate Empathy in Higher Education Students

Fatima A Hernández (Tecnológico de Monterrey & Escuela de Arquitectura, Arte y Diseño, Mexico)

Mario Navarro-Estrella (Tecnológico de Monterrey, Mexico & Escuela de Arquitectura, Arte y Diseño, Mexico)

Juan-Carlos Rojas (Tecnológico de Monterrey & Escuela de Arquitectura, Arte y Diseño, Mexico)

Jaime Alvarez (Takushoku University, Japan)

15:15

Facing Post-Pandemic Challenges in Engineering Education: Promoting Global Collaborations in Latin America

Laura Eugenia Romero Robles (Tecnológico de Monterrey, Mexico)

Maria M. Larrondo-Petrie (Florida Atlantic University, USA)

Jose Texier (LACCEI, USA)

Miguel Angel Sosa (Universidad Tecnológica Nacional, Argentina)

Libis C. Valdez-Cervantes (Fundación Tecnológica Antonio de Arevalo, Colombia)

Vianney Lara-Prieto (Tecnológico de Monterrey, Mexico)

15:30

Applying the Lean Manufacturing Tools "5S" and "7 Wastes" for the Learning and Development Within College Students

Oswaldo Javier Loera Castro (ITESM, Mexico)

Rafael González Saravia Garza (ITESM, Mexico)

Emma Evelia De la Garza Inzunza (ITESM, Mexico)

Carlos Vázquez Hurtado (ITESM, Mexico)

15:45

Work in Progress: Use of Technology and Scrum as an Agile Methodology to Favor the Development of Balanced Teamwork Enrichment Skills in Higher Education Subjects

Ana Mónica Turcios-Esquivel (Tecnologico de Monterrey, Mexico)
Gibrán Sayeg-Sánchez (Tecnologico de Monterrey, Mexico)
Eréndira Avilés (Tecnologico de Monterrey, Mexico)

16:00

XSpace: Self-Learning Platform for Implementation of Digital Control System Algorithms

Pablo Cardenas (Pontificia Universidad Catolica del Peru, Peru)
Leslie Y Cieza (Pontificia Universidad Catolica del Peru, Peru)
Ingrid M Horna (Pontificia Universidad Catolica del Peru, Peru)
Claudia R Páuyac (Pontificia Universidad Catolica del Peru, Peru)
Celso De-La-Cruz Casaño (Pontificia Universidad Catolica del Peru, Peru)
Julio Cesar Tafur Sotelo (Pontificia Universidad Catolica del Peru, Peru)

16:15

Alfaba: A Tangible Solution to Support Brazilian Dyslexic Children in Their Literacy Process

Laura Q Jurgina (Universidade Federal de Pelotas, Brazil)
Lui Gill Aquini (Universidade Federal de Pelotas, Brazil)
Rafael Soares (Universidade Federal de Pelotas, Brazil)
Leomar Soares da Rosa, Jr. (Universidade Federal de Pelotas, Brazil)
Marilton S Aguiar (Universidade Federal de Pelotas, Brazil)
Tiago Thompsen Primo (Universidade Federal de Pelotas, Brazil)

16:30 – 18:00

SS5: Recognition of Learning: Status, Experiences, and Challenges

Room: Symphony Style Hotel, Room 9B

Session Chairs: Carlos Delgado-Kloos and Edmundo Tovar

16:30

Meta-Review of Recognition of Learning in LMSs and MOOCs

Cristina Alonso-Fernandez (Universidad Autónoma de Madrid, Spain)
Ruth Cobos (Universidad Autonoma de Madrid, Spain)

16:45

Recognizing Lifelong Learning Competences: A Report of Two Cases

Edmundo Tovar (Universidad Politécnica de Madrid & Facultad de Informática, Spain)
Bernardo Tabuenca (Universidad Politécnica de Madrid, Spain)
Wolfgang Greller (Pädagogische Hochschule Wien, Austria)
Nelson Piedra (UTPL, Ecuador)

17:00

Recognizing the Value of Recognition in Education

Carlos Delgado Kloos (Universidad Carlos III de Madrid, Spain)
Carlos Alario Hoyos (Universidad Carlos III de Madrid, Spain)
María-Blanca Ibáñez (Universidad Carlos III de Madrid, Spain)
Pedro J. Muñoz -Merino (Universidad Carlos III de Madrid, Spain)
Pedro Manuel Moreno-Marcos (Universidad Carlos III de Madrid, Spain)
Iria Estevez-Ayres (Universidad Carlos III de Madrid, Spain)

17:15

A Study About the Impact of Rewards on Student's Engagement With the Flipped Classroom Methodology

Jaime Urquiza-Fuentes (Universidad Rey Juan Carlos, Spain)

17:30

Assessment and Recognition in Technical Massive Open On-Line Courses With and Without On-Line Laboratories

Sergio Martín

Manuel Castro

Elio Sancristobal (Spanish University for Distance Education - UNED, Spain)

Gabriel Díaz (Universidad Nacional de Educación a Distancia - UNED, Spain)

Blanca Quintana (Universidad Nacional de Educación a Distancia, Spain)

Rosario Gil (Spanish University for Distance Education - UNED, Spain)

Felix García Loro (Spanish University for Distance Education (UNED), Spain)

Clara Pérez (Spanish University for Distance Education - UNED, Spain)

Pedro Plaza (Universidad Nacional de Educación a Distancia, Spain)

Africa López-Rey (UNED, Spain)

German Carro Fernández (Universidad Nacional de Educación a Distancia, Spain)

Antonio Robles-Gómez (Universidad Nacional de Educación a Distancia (UNED), Spain)

Miguel Rodríguez-Artacho (UNED University, Spain)

Llanos Tobarra (UNED, Spain)

Jose A. Ruipérez-Valiente (University of Murcia, Spain & Massachusetts Institute of Technology, USA)

17:45

Bootstrapping Serious Games to Assess Learning Through Analytics

Manuel Freire (Universidad Complutense de Madrid, Spain)

Antonio Calvo-Morata (Universidad Complutense de Madrid, Spain)

Ivan Martínez-Ortiz (Universidad Complutense de Madrid, Spain)

Baltasar Fernández-Manjón (Universidad Complutense de Madrid, Spain)

16:30 – 18:00

SS6: AI, ML & IOT in Education

Room: Symphony Style Hotel, Room 10A

Session Chair: Mounib Khanafer

16:30

Early Predictions of Course Outcomes in a Flipped Classroom Context

Martín Liz-Domínguez (University of Vigo, Spain)

Martín Llamas-Nistal (Atlanttic - University of Vigo, Spain)

Manuel Caeiro-Rodríguez (University of Vigo, Spain)

Fernando Mikic-Fonte (Universidad de Vigo, Spain)

16:45

The Similarity Between Human Teacher Evaluation and Evaluation by A.I. on First-Year Kinematics Learning of Engineering Students

Ana M Mutio (Tecnologico de Monterrey, Mexico)

Jose M Pardo (Tecnologico de Monterrey, Mexico)

Cesar E Garcia-Ortiz (Tecnologico de Monterrey, Mexico)

Eréndira Avilés (Tecnologico de Monterrey, Mexico)

Lilian Ochoa (Tecnologico de Monterrey, Mexico)

Omar Olmos (Tecnologico de Monterrey, Mexico)

Santa Tejeda (Tecnologico de Monterrey, Mexico)

17:00

Teaching Autonomous Vehicles at the Graduate Level: Challenges and Efficient Offering

Mohamed Abu Sharkh (Ferris State University, USA)

Russell Leonard (Ferris State University, USA)

Jacob Goeldel (Ferris State University, USA)

17:15

Towards Application-Driven IoT Education

Mounib Khanafer (American University of Kuwait, Kuwait)

Tushar Jois (Johns Hopkins University, USA)

17:30

Challenge-Based Learning Applied to Engineering Modeling Classes Using Dynamic Systems

Jose M. Nieto-Jalil (ITESM, Mexico & Tecnologico de Monterrey, Mexico)

Diego Seuret Jimenez (UAEM, Mexico)

Iván Gutiérrez Cruz (Tecnologico de Monterrey, Mexico)

Adrián Israel Tec Chim Tec Chim (Tecnologico de Monterrey, Mexico)

Héctor Kinto Ramírez (Tecnologico de Monterrey, Mexico)

17:45

Face Monitor: An Arbitrary Approach for Facial Engagement Monitoring in Virtual Classrooms

Syeda Hafsa Masood (Northumbria University London Campus UK, United Kingdom (Great Britain))

Yusra Siddiq (Northumbria University London Campus UK, United Kingdom (Great Britain))

Bilal Hassan (Northumbria University London Campus UK, United Kingdom (Great Britain))

16:30 – 18:00

TS7: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Paul Bogere

16:30

Improving the Learning Effectiveness of Educational Videos

Jose M. Martins Ferreira (Universidade do Porto, Portugal)

Fahim Salim (University of South-Eastern Norway, Norway)

16:45

Initial Approach for Construction of a Public Dataset for Emotional Analysis Through Brain-Computer Interfaces and Second Language Platforms

Andres Ovidio Restrepo (UNIR, Colombia)

Maddyzeth Ariza Riaño (Universidad Distrital Francisco José de Caldas, Colombia)

Paulo Gaona (GIIRA Research Group, Colombia)

Carlos Enrique Montenegro-Marin (Universidad Distrital Francisco José de Caldas, Colombia)

Rubén González Crespo (Colombia)

17:00

Into the Heat of the Debate: Simulating a Program Committee Within Computer Science Education

Sam Maesschalck (Lancaster University, United Kingdom (Great Britain))

Matthew Bradbury (Lancaster University, United Kingdom (Great Britain))

Vasileios Giotsas (Lancaster University, United Kingdom (Great Britain))

17:15

Introducing Video Art in STEM Education Alleviates Negative Academic Emotion

Aikaterini Daneli (University of Ioannina, Greece)

Panagiota Koulouri (University of Ioannina, Greece)

Chrysoula Tzima (University of Ioannina, Greece)

Ilias Chatzichristodoulou (Athens Digital Arts Festival & Project 210, Greece)

Lefkothea-Vasiliki Andreou (University of Ioannina, Greece)

17:30

Career Track Based Capstone Course Design for Information Systems Curriculum

Swapna Gottipati (Singapore Management University, Singapore)

Kyong Jin Shim (Singapore Management University, Singapore)

Subhajit Datta (Florida State University, USA)

17:45

PICA-PICA: Exploring a Customisable Smart STEAM Educational Approach via a Smooth Combination of Programming, Engineering and Art

Takashi Nagai (Institute of Technologists, Japan)

Strahinja Klem (Durham University, United Kingdom (Great Britain))

Mizue Kayama (Shinshu University, Japan)

Takehiko Asuke (Ina City Tobu Junior High School, Japan)

Maram Meccawy (King Abdulaziz University, Saudi Arabia)

Alexandra Ioana Cristea (Durham University, United Kingdom (Great Britain))

Jingyun Wang, Lei Shi (Durham University, United Kingdom (Great Britain))

Craig D Stewart (Durham University, United Kingdom (Great Britain))

16:30 – 18:00

TS8: Infrastructure and Technologies for Engineering Education

Room: Symphony Style Hotel, Room 10B

Session Chair: Hamad Al Jassmi

16:30

From Speaking Skills to Virtual Mobilities: Challenges of VR Technologies in Communication, From the European University of Technology

Aurelia Ciupe (Technical University of Cluj-Napoca, Romania);
Sonia Munteanu (Technical University of Cluj-Napoca, Romania)
Antigoni Parmaxi (Cyprus University of Technology, Cyprus)
Anna Nicolaou (Cyprus University of Technology, Cyprus)
Susanna Nocchi (TU Dublin, Ireland)
Odette Gabaudan (TU Dublin, Ireland)
Ana Schalk (TU Dublin, Ireland)

16:45

ICT Coding Bootcamps as a Career Development Tool in a Transitioning Economy of South Africa: A Review Paper

Godwin Pedzisai Dzvapatsva (Walter Sisulu University, South Africa)
David Tatenda Risinamhodzi (Walter Sisulu University, South Africa)
Courage Matobobo (Walter Sisulu University, South Africa)

17:00

Learning Web Programming: Identifying Complex Topics From Student Discussion Forums and Lecture Slides

Swapna Gottipati (Singapore Management University, Singapore)
Kyong Jin Shim (Singapore Management University, Singapore)
Richie Tan (Singapore Management University, Singapore)
Zi Rong Tan (Singapore Management University, Singapore)

17:15

Work in Progress: Teaching in Engineering Education: Investigating Instructors' Technology Acceptance and Teaching Style in Kuwait University

Mohammad Alsager Alzayed (Kuwait University, Kuwait)
Dalal Alzamel (Kuwait Capital Markets Authority, Kuwait)

17:30

Requirements of a Digital Education Credential System

Alexander Mühle (Hasso Plattner Institute, University of Potsdam, Germany); Daniel P Koehler (Hasso-Plattner-Institute, Germany);
Katja Assaf (Hasso Plattner Institute, University of Potsdam, Germany); Christoph Meinel (Hasso-Plattner-Institute, Germany)

17:45

Awaken Awareness: A Path to Reduce Discrimination and Increase Gender Equity in STEM

Mariza Tsakalerou (Nazarbayev University, Kazakhstan)
Asma Perveen (Nazarbayev University, Kazakhstan)
Saiyn Kurmankulov (Nazarbayev University, Kazakhstan)

16:30 – 18:00

TS9: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Amjad Hussain

16:30

Integrating Data Structures and Algorithms in K-12 Education Using Block-Based Programming

Ashwin Jagadeesha (University of Massachusetts Lowell, USA)
Pranathi Rayavaram (University of Massachusetts Lowell, USA)
Justin Marwad (University of Massachusetts Lowell, USA)
Sashank Narain (University of Massachusetts Lowell, USA)
Claire Seungeun Lee (University of Massachusetts Lowell, USA)

16:45

Utilizing Augmented Reality to Enhance Twenty-First-Century Skills in Chemistry Education

Marwan Abualrob
Ahmed Ewais (Arab American University of Palestine, Palestine)
Fisnik Dalipi (Linnaeus University, Sweden)
Thawra Awaad (Arab American University of Palestine, Palestine)

17:00

Building a IT-Security Laboratory for Complex Teaching Scenarios Using 'Infrastructure as Code'

Marcus Soll (NORDAKADEMIE gAG Hochschule der Wirtschaft, Germany)

Hendrik Helmken (NORDAKADEMIE gAG Hochschule der Wirtschaft, Germany)

Michel Belde, Sebastian Schimpfhauser (NORDAKADEMIE gAG Hochschule der Wirtschaft, Germany)

Daniel Versick (NORDAKADEMIE gAG Hochschule der Wirtschaft, Germany)

17:15

Towards the Gender Equity in Education: Strategies to Develop Equity Leadership in Higher Education Institutions

Maria Ileana Ruiz Cantisani (Tecnológico de Monterrey, Mexico)

Jorge Membrillo-Hernández (Tecnologico de Monterrey, Mexico)

Patricia Caratozzolo (Tecnologico de Monterrey, Mexico)

Vianney Lara-Prieto (Tecnologico de Monterrey, Mexico)

17:30

What Exactly IS a Laboratory in Computer Science?

Marcus Soll (NORDAKADEMIE gAG Hochschule der Wirtschaft, Germany)

17:45

Undergraduates' Perceptions of Mathematics Learning Through Contextualized Problems in Professional Practice: Comparative Analysis of Traditional Qualitative and Data Mining Techniques

Maritza Peña-Becerril (Tecnológico de Monterrey, Mexico)

Claudia Camacho-Zuñiga (Tecnológico de Monterrey, Mexico)

David Antonio Buentello-Montoya (Tecnologico de Monterrey, Mexico)

Julio César Ávila (Tecnológico de Monterrey, Mexico)

Nicolás Amado-Moranchel (Tecnológico de Monterrey, Mexico)

18:00 – 19:30

Welcome Reception

Room: Symphony Style Hotel, Symphony Style Mall Arabian Gulf Road Salmiya, 22012, Kuwait

Wednesday, May 3, 2023

*All times appear in Arabian Standard Time (AST)

07:00 – 18:00

Registration

Room: Symphony Style Hotel Ground Floor

08:30 – 10:00

TS10: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Keiichi Yonemura

8:30

ATHENA European University: An Educational Joint Model for Sustainable Education

Nuno Escudeiro (Polytechnic Institute of Porto & ATHENA European University, Portugal)

Paula Escudeiro (Polytechnic Institute of Porto, Portugal)

Márcia Campos Gouveia (Polytechnic Institute of Porto, Portugal)

Tiago Oliveira (Polytechnic Institute of Porto, Portugal)

8:48

A Student-Centered Learning Methodology in Power Electronics

John Avaritsiotis (Kuwait College of Science & Technology, Kuwait)

9:06

A Systematic Literature Review on Faculty Learning in Service-Learning

Surendra Reddy Bandi (Hyderabad Institute of Technology and Management, India)

Gopalkrishna Joshi (Karnataka State Higher Education Council, India)

Ashok Shettar (KLE Technological University, India)

Rohit Kandakatla (KG Reddy College of Engineering and Technology, India)

9:24

A Two-Year STEM Initiative on Students' Attitudes Towards Science

Elena Elliniadou (Harokopio University of Athens, Greece)

Chryssa Sofianopoulou (Harokopio University of Athens, Greece)

08:30 – 10:00

TS11: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9B

Session Chair: Mohammad Alsager Alzayed

8:30

Learner Engagement Analytics in a Hybrid Learning Environment

Usman Naeem (Queen Mary University of London, United Kingdom (Great Britain))

Lisa Bosman (Purdue University, USA)

8:48

Learning Tools Using Block-Based Programming for AI Education

Chris-Bennet Flegler (Leibniz University Hannover, Germany)

Yousuf Amanuel (Leibniz University Hannover, Germany)

Johannes Krugel (Leibniz University Hannover, Germany)

9:06

Leveraging Computer Algebra Systems in Calculus: A Case Study With SymPy

Firuz Kamalov (Canadian University Dubai, United Arab Emirates)

David Santandreu (MBZUAI, United Arab Emirates)

Ho Hon Leung (United Arab Emirates University, United Arab Emirates)

Jason Johnson (Emirates College for Advanced Education, United Arab Emirates)

Ziad Elkhatab (Canadian University Dubai, United Arab Emirates)

9:24

mySkills - A Reflective Framework for Employability Skills

Usman Naeem (Queen Mary University of London, United Kingdom (Great Britain))

Lisa Bosman (Purdue University, USA)

Claire Revell (Queen Mary University of London, United Kingdom (Great Britain))

9:42

Gender Differences in School Students' Perceptions Towards Engineering: A Case Study From Rural South India

N P Subheesh (Indian Institute of Technology Madras, India)

E A Ayisha (Federal Institute of Science and Technology (FISAT), India)

Vijay Akash (St Josephs College of Engineering and Technology Palai, India)

Akshay R S (Government Engineering College Barton Hill, India)

S Sarath (IEEE Education Society Kerala Chapter Kerala India, India)

Yadhukrishna K (College of Engineering Munnar, India)

08:30 – 10:00

TS12: Serious Games, Game-Based Learning and Gamification for Engineering Education

Room: Symphony Style Hotel, Room 10B

Session Chair: José Manuel Martins Ferreira and Nuno Pombo

8:30

Evaluation of a Serious Game for Young Software Engineering Graduates: Interviewing Skills and Soft Skills

Semira Maria Evangelou (University of Patras, Greece)

Michalis Xenos (University of Patras, Greece)

Vangelis Kapsoulakis (University of Patras, Greece)

8:48

Flipped Classroom as a Learning Strategy in Reading Comprehension: A Case Study of Higher Education

Wilmer Burbano (Universidad Tecnológica Indoamerica, Ecuador)

9:06

Gamification as Collaborative Learning Resource in Technological Education

Cristina Paez Quinde (Ambato & Instituto Superior Tecnológico España, Ecuador)

9:24

Impact of a Mobile Serious Game on Learning Outcomes for Complex Problem Solving Skills

Igor Miladinovic (University of Applied Sciences FH Campus Wien, Austria)

Sigrid Schefer-Wenzl (University of Applied Sciences FH Campus Wien, Austria)

Katharina Bajic-Kerndl (University of Technology Vienna, Austria)

9:42

Quantum Serious Games to Boost Quantum Literacy Within Computational Thinking 2.0 Framework

Apostolos Xenakis (University of Thessaly, Greece)

Maria Avramouli (University of Thessaly, Greece)

Maria Sabani (University of Thessaly, Greece)

Ilias K. Savvas (University of Thessaly, Greece)

Costas Chaikalis (University of Thessaly, Greece)

Kalliopi Theodoropoulou (University of Thessaly, Greece)

08:30 – 10:00

TS13: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Seyed Esmaeili

8:30

The Role of Collaborative Online International Learning (COIL) as a Tool to Meet Engineering Accreditation Student Outcomes

Vianney Lara-Prieto (Tecnologico de Monterrey, Mexico)

Maria Ileana Ruiz Cantisani (Tecnológico de Monterrey, Mexico)

Jorge Membrillo-Hernández (Tecnologico de Monterrey, Mexico)

Patricia Caratozzolo (Tecnologico de Monterrey, Mexico)

Rebeca García-García (Tecnologico de Monterrey, Mexico)

Luis Alberto Mejía-Manzano (Tecnologico de Monterrey, Mexico)

Olga Patricia Vazquez-Villegas (Tecnologico de Monterrey, Mexico)

8:48

On the Feasibility of Using AI for Improving the Quality of Education Systems

Nisha Thorakkattu Madathil (UAE University, United Arab Emirates)

Saed Alrabaei (United Arab Emirates University, United Arab Emirates)

Mousa Al-kfairy (Zayed University, United Arab Emirates)

Rafat Damseh (United Arabs Emirates University, United Arab Emirates)
Abdelkader Nasreddine Belkacem (United Arabs Emirates University, United Arab Emirates)

9:06

Towards a Mixed Virtual Reality Environment Implementation to Enable Industrial Robot Programming Competencies Within a Cyber-Physical Factory

Edison Ricardo Altamirano (ITESM, Mexico)
Armando Roman (ITESM, Mexico)
Adriana Vargas (ITESM, Mexico)
Carlos Vázquez Hurtado (ITESM, Mexico)

9:24

Post-Pandemic Hybrid Lectures are Here to Stay

Johannes Schmaelzle (Cooperative State University Baden Württemberg Karlsruhe, Germany)
Kay Berkling (Cooperative State University Baden Württemberg, Germany)

9:42

Interactive Teaching Reform for Principles of Automatic Control Course Based on Professional Cases

Liqun Chen (Shenzhen Technology University & College of Urban Transportation and Logistics, China)
Wenjing Shen (Shenzhen Technology University, China)
Zhengwei Ma (Shenzhen Technology University, China)
Franz Raps (Shenzhen Technology University, China)
Shupeng Zhang (Shenzhen Technology University, China)

08:30 – 10:00

TS14: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 10A
Session Chair: Amjad Hussain

8:30

Improving Face-To-Face Learning Using an Adaptive Technology

Elvira G. Rincon-Flores (Tecnológico de Monterrey, Mexico & GRIAL Research Group, Spain)
Nohemí Rivera Vázquez (Tecnológico de Monterrey, Mexico)
Laura Patricia Aldape Valdes (Tecnológico de Monterrey, Mexico)
Leticia Castaño Sanchez (Tecnológico de Monterrey, Mexico)
Laura Angélica Castillo Lara (Tecnológico de Monterrey, Mexico)
Sadie Lissette Guerrero Solis (Tecnológico de Monterrey, Mexico)

8:48

A Comparative Study of Simulated and Hands-On Experiments in Teaching Computer Networks Laboratory Course

Refik Caglar Kizilirmak (Nazarbayev University, Kazakhstan)
Abylaikhan Kassayev (Nazarbayev University, Kazakhstan)
Ikechi Augustine Ukaegbu (Nazarbayev University, Kazakhstan)

9:06

Male Perspective in Relation to the Gender Gap in STEM Careers

María Yolanda Burgos-Lopez (Tecnológico de Monterrey, Mexico)
Maria Ileana Ruiz Cantisani (Tecnológico de Monterrey, Mexico)
Maria Rubi Forte-Celaya (Tecnológico de Monterrey, Mexico)
Karen Yolanda Franco-Alvarez (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)
Sandra Eugenia García-Hernández (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)
David Gutiérrez-Franco (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)

9:42

Designing a Visual Cryptography Curriculum for K-12 Education

Pranathi Rayavaram (University of Massachusetts Lowell, USA)
Sreekriti Sista (Heritage Highschool, USA)
Ashwin Jagadeesha (University of Massachusetts Lowell, USA)
Justin Marwad (University of Massachusetts Lowell, USA)
Nathan Percival (University of Massachusetts Lowell & Bowling Green State University, USA)
Sashank Narain (University of Massachusetts Lowell, USA)
Claire Seungeun Lee (University of Massachusetts Lowell, USA)

9:42

Gamit! A Beat for Learning

Brenda N. Santos-Guevara (Tecnológico de Monterrey, Mexico)
Elvira G. Rincon-Flores (Tecnológico de Monterrey, Mexico & GRIAL Research Group, Spain)
Lizette Martínez Cardiel (Universidad Autónoma de Barcelona, Mexico)
Nadia Rodríguez-Rodríguez (Universidad de Lima, Mexico)
Alberto Matsuura and Hernan Quintana (Universidad de Lima, Peru)

10:00 – 10:30

Coffee Break/Exhibits

Room: Symphony Style Hotel, 9th and 10th Floor

10:30 – 11:15

Keynote: Remote Laboratories for Engineering Education: Research, Practice and Standardization

Johann Marquez-Barja, *IMEC & University of Antwerp*

Room: AUK Theater

Session Co-Chairs: Michael Auer and Thomas Klinger

11:15 – 12:00

Keynote: Engineering in Place: The Role of Localized Expertise in Engineering Education

Jennifer DeBoer, *Purdue University*

Room: AUK Theater

Session Co-Chairs: Michael Auer and Thomas Klinger

12:00 – 13:30

Round Table: AI and ChatGPT

Carlos Delgado Kloos, *Universidad Carlos III de Madrid*

Abdullah Y. Al Zoubi, *Princess Sumaya University for Technology*

Marco Zappatore, *University of Salento*

Room: AUK Theater

Session Co-Chairs: Christos Douligeris and Habib Kammoun

13:30 – 15:00

Lunch

Room: Symphony Style Hotel

15:00 – 16:30

TS15: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Marwa Sharawi

15:00

A Brick-By-Brick Approach to Learning MIPS Microarchitecture

Jibran Khan Yousafzai (American University of Kuwait, Kuwait)

Aimal Khan Yousafzai (British Telecom, United Kingdom (Great Britain))

15:18

Attracting Engineering Students to Non-Technical Seminars by Including International Student Competitions Into the Regular Engineering Curriculum

Alexander Rundau (Bonn-Rhein-Sieg University of Applied Sciences & BRS Motorsport, Germany)

Dennis Günther (Bonn-Rhein-Sieg University of Applied Sciences & BRS Motorsport, Germany)

Jan Behrendt (Bonn-Rhein-Sieg University of Applied Sciences & BRS Motorsport, Germany)

Daniel Röthgen (Bonn-Rhein-Sieg University of Applied Sciences & BRS Motorsport, Germany)

Martina Grein (Bonn-Rhein-Sieg University of Applied Sciences, Germany)

Dirk Reith (Bonn-Rhein-Sieg University of Applied Sciences, Germany)

15:36

Augmented Reality for Programming Teaching: An Exploratory Study

Nuno Pombo (University of Beira Interior & BSAFE - Lab, Portugal)

Joana Branco (Universidade da Beira Interior, Portugal)

15:54

Business Plan Ready - an Interdisciplinary Approach in Teaching and Learning How to Start Up in Biomedical Engineering

Thomas Neumann (University of Siegen, Germany)

Rainer Brück (University of Siegen, Germany)

Olaf Gaus (University of Siegen, Germany)

16:12

Knowledge Transfer Concepts for Microgrids Sustainability - the Case of East Africa

Paul Bogere (Paderborn University, Germany)

Katrin Temmen (University Paderborn, Germany)

Henrik Bode (Paderborn University, Germany)

15:00 – 16:30

TS16: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9B

Session Chair: Maria Joao Viamonte

15:00

Recreation of Different Educational Exercise Scenarios for Exercise Modeling

Alberto Jimenez-Macias (Universidad Carlos III de Madrid & Departamento de Telemática, Spain)

Pedro J. Muñoz -Merino (Universidad Carlos III de Madrid, Spain)

Carlos Delgado Kloos (Universidad Carlos III de Madrid, Spain)

15:18

Semi-Structured Lab Projects in Communication Engineering Education

Thomas Fuhrmann (OTH Regensburg, Germany)

15:36

Sharing Our Positive Experience About the ASSETs+ European Defence Challenge

Eric J. Grivel (Université de Bordeaux, France)

Mateo Burgos (University Politecnica de Madrid, Spain)

Dorota Stadnicka (Rzeszow University of Technology, Poland)

Gualterio Fantoni (University of Pisa, Italy)

15:54

In-Class Student Emotion and Engagement Detection System (iSEEDS): An AI-Based Approach for Responsive Teaching

Sai Krishna Vishnumolakala (SRM University AP, India)

Sadwika Vallamkonda (SRM University AP, India)

Sobin C C (SRM University Amaravati, AP, India)

N P Subheesh (Indian Institute of Technology Madras, India)

Jahfar Ali (LTRC, IIT Hyderabad, India)

15:00 – 16:30

TS17: Serious Games, Game-Based Learning and Gamification for Engineering Education

Room: Symphony Style Hotel, Room 10A

Session Chair: Abderrazek Hachani and Khalid Sultan

15:00

Motivation in Teaching Expert Development Project by KOSEN Security Educational Community

K. Yonemura (National Institute of Technology, Kisarazu College, Japan)

Hideyuki Kobayashi (KOSEN, Japan)

Shinya Oyama (National Institute of Technology Hakodate College, Japan)

Tatsuki Fukuda (National Institute of Technology Kitakyushu College, Japan)

Manabu Hirano (National Institute of Technology Toyota College, Japan)

Keiichi Shiraishi (National Institute of Technology Kagawa College, Japan)

Noriaki Hayashi (Trend Micro Incorporated, Japan)

Hideaki Moriyama (National Institute of Technology Ariake College, Japan)

Shingo Okamura (Osaka University, Japan)

Shigeo Doi (KOSEN, Japan)

Tomoharu Kaeriyama (National Institute of Technology Kisarazu College, Japan)

Ryotaro Nakata (Hitotsubashi University, Japan)

Masaki Hashimoto (Institute of Information Security, Japan)

Jun Sato (National Institute of Technology Tsuruoka College, Japan)

Hisashi Taketani (National Institute of Technology Tsuyama College, Japan)

Satoru Yamada (National Institute of Technology Ishikawa College, Japan)

Satoru Izumi (National Institute of Technology Sendai College, Japan)

Hiroiyuki Okamoto (National Institute of Technology Anan College, Japan)

Youichi Fujimoto (National Institute of Technology Kumamoto College, Japan)

Yoshinori Sakamoto (National Institute of Technology Toyama College, Japan)

Masao Maruyama (National Institute of Technology Kisarazu College, Japan)

Kentaro Noguchi (KOSEN, Japan)

Seiichi Kishimoto (KOSEN, Japan)

15:18

Programming Education for Young People Using the Falling-Puzzle Game, "Puyo Puyo"

Daisuke Saito (Waseda University, Japan)

Ruochen Tian (Waseda University, Japan)

Hironori Washizaki (Waseda University, Japan)

Yoshiaki Fukazawa (Waseda University, Japan)

15:36

SkillsLab+ - Proof of Concept for Medical Augmented Reality Teaching Application With Haptic Feedback

Christian Gießler (University of Siegen, Germany)

Johannes Schmitt (University of Siegen, Germany)

Jonathan Otterbach (University of Siegen, Germany)

Michelle Limbach (University of Siegen, Germany)

Rainer Brück (University of Siegen, Germany)

15:54

The Privacy Universe - a Game-Based Learning Platform for Data Protection, Privacy and Ethics

Michael Christensen (Aalborg University & NNIT, Denmark)

Jens M. Pedersen (Aalborg University, Denmark)

Lene Sørensen (Aalborg University, Denmark)

Daniel Britze (Aalborg University, Denmark)

Jacob Vejlin (Aalborg University, Denmark)

15:00 – 16:30

TS18: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Mounib Khanafer

15:00

What Sentiments are Generated in Learning Experiences With Autonomous and Multicultural Teams?

Ivo Neftali Ayala (Tecnologico de Monterrey, Mexico)

Eduardo Daniel Juárez (Tecnologico de Monterrey, Mexico)

Noreha Abdul Malik (International Islamic University Malaysia, Malaysia)

Anis Nurashikin Nordin (International Islamic University Malaysia, Malaysia)

Lilia Carolina Rodriguez-Galvan (Tecnologico de Monterrey, Mexico)

Somphop Rodamporn (Faculty of Engineering, Thailand)

15:18

Work in Progress: Design and Implementation of a Microservices Architecture for Project-Based Learning of Software Engineering Patterns

Hiram M Muñoz (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)

Carlos Vázquez Hurtado (ITESM, Mexico)

15:36

Survey for Interdisciplinary Co-Supervision on Bachelor Thesis in Nautical Science

Baiheng Wu (Norwegian University of Science and Technology, Norway)

Hans-Ingar Johansen Aandahl (Norwegian University of Science and Technology, Norway)

Romeo Bosneagu (Mircea Cel Batran Naval Academy, Romania)

Martin Lied Sæter (Norwegian University of Science and Technology, Norway)

Doru Cosofret (Mircea Cel Batran Naval Academy, Romania)

Elena-Rita Avram (Mircea Cel Batran Naval Academy, Romania)

Houxiang Zhang (Norwegian University of Science and Technology, Norway)

Guoyuan Li (Norwegian University of Science and Technology, Norway)

15:54

Towards New Generation of Civil Engineers in the IoT Era: PBL as a Tool for Integrating IoT in Civil Engineering Curricula

Hachani Abderrazak (ESPRIT School of Engineering, Tunisia)

Nadia Ajailia (ESPRIT School of Engineering, Tunisia)

16:12

Measuring Teachers' Readiness for Multi-Campus Collaboration in Higher Education

Abdullah Bahmani (The Norwegian University of Science and Technology (NTNU), Norway)

Rune Hjelsvold (NTNU, Norway)

15:00 – 16:30

Education Society Steering Committee Meeting

Room: American University of Kuwait (AUK), Room G-341

16:30 – 18:00

SS7: GinEE - Games in Engineering Education

Room: Symphony Style Hotel, Room 10A

Session Chair: Jibran Yousafzai

16:30

ZooLector: Raising Awareness of Biodiversity Loss to All

Paula Escudeiro (Polytechnic Institute of Porto, Portugal)

Nuno Escudeiro (Polytechnic Institute of Porto & ATHENA European University, Portugal) Márcia Campos Gouveia (Polytechnic Institute of Porto, Portugal)

16:48

A Gamified Approach to Concrete Structure's Interpretation Using Virtual Reality: A Study of Performance and Simulation Sickness

Mohamad Iyad Bassam AlKhiami (Australian University - Kuwait, Kuwait)

Sayed Mohamad Soleimani (The Pennsylvania State University, USA)

Martin Jaeger (Australian University - Kuwait, Kuwait)

17:06

Simulation Tool for Learning Action-Oriented Process Mining

Clemens Drieschner (Technical University of Munich, Germany)

Andreas Heckl (Technical University of Munich, Germany)

Helmut Krcmar (Technical University of Munich, Germany)

17:24

Work in Progress: Enhancing Skills in Bachelor Classes by Gamifying Learning Management Systems

Lampros Karavidas (Aristotle University of Thessaloniki, Greece)

Thrasyvoulos Tsiatsos (University of Thessaloniki, Greece)

Ioannis Stamelos (Aristotle University of Thessaloniki, Greece)

16:30 – 18:00

SS8: Learner Engagement Analytics Informed Pedagogy (LEAP)

Room: Symphony Style Hotel, Room 10B

Session Chair: Usman Naeem

16:30

Sustainability-Oriented Schools in Greece: Analyzing Pupils' Opinions and Perceptions About Sustainability and Redesign Computer Science Curricula Towards Green Informatics

Maria Eftychia Angelaki (University of Piraeus, Greece)

Theodoros Karvounidis (University of Piraeus, Greece)

Christos Douligeris (University of Piraeus, Greece)

16:45

Work in Progress: Exploring Computer Science Student Engagement Factors Within the Learning Analytics Context to Increase Their Academic Achievement

Hafsa Omer AL Ansari (UTAS & University of Huddersfield, Oman)

17:00

Using YouTube's Social Media Analytics to Improve Educational Videos

Philip R Baron (University of Johannesburg, South Africa)

17:15

Design and Development of the Graphology-Based Career Analysis and Prediction System (G-CAPS) for Engineering Students

R P Archana (TKM College of Engineering Kollam & APJ Abdul Kalam Technological University, Kerala, India)

S M Anzar (TKM College of Engineering, Kollam, Kerala, India)

N P Subheesh (Indian Institute of Technology Madras, India)

17:30

Examining Various Search Algorithms in AI With Appropriate Literature and Their Performances Against a Human Agent in the Snake Game

Sheikh Sharfuddin Mim (Frankfurt University of Applied Sciences, Germany)

Md Nahin Islam (Frankfurt University of Applied Sciences, Germany)

Doina Logofatu (Frankfurt University of Applied Sciences, Germany)

17:45

An Interactive STEAM Educational Approach via a Combination of Programming, Information & Communication Network and Arts: PICAPICA-Z

Mizue Kayama (Shinshu University, Japan)

Issei Mukoda (Shinshu University, Japan)

Takashi Nagai (Institute of Technologists, Japan)

16:30 – 18:00

TS19: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Thomas Fuhrmann

16:30

Community-Based Hackathon as a Problem Identifying Tool for Capstone Projects

David Tatenda Risinamhodzi (Walter Sisulu University, South Africa)

Reolyn Heymann (University of Johannesburg, South Africa)

16:48

Developing Computational Thinking in STEM Education With Drones

Farha Sattar (Charles Darwin University, Australia)

Muhammad Nawaz (National University of Singapore, Singapore)

17:06

Digital Transformation of the Cultural Heritage: A Management Platform for the Heritage of the Universidad de Oriente

Sonia Morejon Labrada (Universidad de Oriente, Cuba)

Carlos Ramirez Martin (Universidad de Oriente, Cuba)

Johann M. Marquez-Barja (University of Antwerpen & imec, Belgium)

17:24

Engineering Students' Perceptions Towards Promoting Sustainability

Mantoura Nakad (University of Balamand, Lebanon)

Klara Kövesi (ENSTA-Bretagne, France)

Linda Gardelle (ENSTA-Bretagne, France)

Rami J Abboud (University of Balamand, Lebanon)

17:42

Entrepreneurship: Taking Care of Ideas

Mauro Citraro (University of Applied Sciences and Arts of Southern Switzerland, Switzerland)

Cristina Carcano-Monti (University of Applied Sciences and Arts of Southern Switzerland, Switzerland)

Simone Pellegrini (Schurter AG, Switzerland)

Alessandro Puiatti (University of Applied Sciences of Southern Switzerland (SUPSI), Switzerland)

Lorenzo Sommaruga (SUPSI, Switzerland)

16:30 – 18:00

TS20: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9B

Session Chair: Gustavo Alves

16:30

The Implementation of the Smart Schoolhouse Concept

Marge Kusmin (Tallinn University, Estonia)

16:48

Towards a Self-Managed and Gamified Laboratory Experience in Undergraduate Engineering Education

Ali A.M.R. Behiry (American University of Kuwait, Kuwait)

Abeer Imdoukh (American University of Kuwait, Kuwait)

Amal Alateyah (American University of Kuwait, Kuwait)

Fatima Badreddine (American University of Kuwait, Kuwait)

Razan AlFar (American University of Kuwait, Kuwait)

Aya Rezk (American University of Kuwait, Kuwait)

17:06

Towards the Design of an Interactive Continuing Training for Software Engineers in Internet of Things Sustainability Using the Example of Autonomous Vehicles

Thomas Auer (University of Innsbruck & Capgemini Deutschland GmbH, Germany)

Simon Haller-Seeber (University of Innsbruck, Austria)

Thomas Gatterer (Akademisches Gymnasium Innsbruck, Austria)

17:24

University - Research - Farm Cooperation to Identify the Halyomorpha Halys Invasion in Orchards

Dan Popescu (University Politehnica of Bucharest, Romania)

Loretta Ichim (University Politehnica of Bucharest, Romania)

17:42

User Experience Design of a Further Training on Test Automation of an AI Self-Driving Robotic Car Powered by a Raspberry Pi

Thomas Auer (University of Innsbruck & Capgemini Deutschland GmbH, Germany)

Simon Haller-Seeber (University of Innsbruck, Austria)

Thomas Gatterer (Akademisches Gymnasium Innsbruck, Austria)

16:30 – 18:00

TS21: Innovation, Methods, Teaching, and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Iyad Abu Doush

16:30

A Framework for Infusing Cybersecurity Programs With Real-World Artificial Intelligence Education

Erald Troja (St. John's University, USA)

Joan E DeBello (St. John's University, USA)

Laura Truong (St. John's University, USA)

16:45

NAO Robot, an Educational Assistant in Training, Educational and Therapeutic Sessions

Michail Feidakis (University of West Attica, Greece)

Konstantina Marathaki (University of West Attica, Greece)

Iro Gkolompia (5th Elementary School of Metamorfosis, Greece)

Athina Marnelaki (National and Kapodistrian University of Athens, Greece)

Sofia Emmanouilidou (Kapodistrian University of Athens, Greece)

Eleni Agrianiti (University of West Attica, Greece)

17:00

Work in Progress: Democratizing Assessment for Sustainable Learning in Mathematics Instruction: Giving Students Agency in Classroom Research

Sima Caspari-Sadeghi (Gottfried-Schäferstraße & University of Passau, Germany)

Brigitte Forster (University of Passau, Germany)

Elena Mille (University of Passau, Germany)

Hella Epperlein (University of Passau, Germany)

17:15

MyOracle: A Question-Answering Application to Improve Access to Information for Low-Literacy Users

Ibrahim Didi (Imperial College London, United Kingdom (Great Britain))

Anandha Gopalan (Imperial College London, United Kingdom (Great Britain))

17:30

Self-Control Mechanism for Performance Evaluation in Students in Mexico

Jose M. Nieto-Jalil (ITESM, Mexico & Tecnologico de Monterrey, Mexico)

Ludovic G. Florent Betton (Tecnologico de Monterrey, Mexico)

17:45

Quo Vadis? - Comprehensive Viewpoint on German Educational Research

Jorge Torres Gomez (TU Berlin, Germany)

Nicolai Spicher (University Medical Center Göttingen, Germany)

Jan Haase (Nordakademie, Germany)

20:00 – 22:00

Gala Dinner

Room: Salwa Al-Sabah Ballroom Hall, Salmiyia, Arabian Gulf St, Kuwait City, Kuwait

Thursday, May 4, 2023

*All times appear in Arabian Standard Time (AST)

07:00 – 13:00

Registration

Room: Symphony Style Hotel Ground Floor

08:30 – 10:00

TS22: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 9A

Session Chair: Martin Liz-Dominguez

8:30

ERC-Language: A Student-Centered Learning Platform for Improving Non-Native' English Reading Comprehension Skills

Argemiro Amaya (UMECIT, Panama)

Leovy Echeverria (Universidad Pontificia Bolivariana, Colombia)

Ruth Cobos (Universidad Autonoma de Madrid, Spain)

Jorge Ardila (Universidad Pontificia Bolivariana, Colombia)

8:48

Exploring Projects in a Python Programming MOOC for Young Learners

Marina Lepp (University of Tartu, Estonia)

Carolyn Kirotar (University of Tartu, Estonia)

9:06

Helping Students With the Most Common Questions in an Introductory Databases Course AI and ChatGPT

Piret Luik (University of Tartu, Estonia)

Marina Lepp (University of Tartu, Estonia)

Karolin Kivilaan (University of Tartu, Estonia)

9:24

Work in Progress: Improving Students' Cognitive Abilities in Online Environment Based on Neurofeedback

Nuraini Jamil (United Arab Emirates University, United Arab Emirates)

Abdelkader Nasreddine Belkacem (United Arab Emirates University, United Arab Emirates)

Abderrahmane Lakas (UAE University, United Arab Emirates)

9:42

Work in Progress: Design and Development of Skill Mapping Focusing on Skills and Competencies Improvement for Factory Electricians: A Case Study in Glass Bottle Beverage Factory

Ni-tit Nukitangsan (KMUTT, Thailand)

Komkrit Chomsuwan (King Mongkut's University of Technology Thonburi, Thailand)

08:30 – 10:00

TS23: Work in Progress - New Teaching and Curriculum Methods

Room: Symphony Style Hotel, Room 9B

Session Chairs: Maria Ruiz Cantisani

8:30

Work in Progress: A Short Learning Program in Electronic Engineering Using Remote Labs

Thomas Klinger (Carinthia University of Applied Sciences, Austria); Wolfgang Werth (Carinthia University of Applied Sciences, Austria)

8:48

Work in Progress: Erasmus+ Project: The Evolving Textbook - TET

Primož Podržaj (University of Ljubljana, Slovenia)

9:06

Work in Progress: Steps to Green Future With Hydrogen Technologies - Implementation of a New Teaching Concept

Wolfgang Werth (Carinthia University of Applied Sciences, Austria)

Christian Madritsch (Carinthia University of Applied Sciences, Austria)

Andreas Warmuth (KAI Competence Center, Austria)

9:24

Work in Progress: What is the Optimal Blended Learning Strategy Throughout Engineering Curricula? Lesson Learned During Covid-19 Pandemic

Antonio Maffei (KTH Royal Institute of Technology, Sweden)

Fredrik Enoksson (KTH Royal Institute of Technology, Stockholm, Sweden)

08:30 – 10:00

TS24: Enhancing Student Skills

Room: Symphony Style Hotel, Room 10A

Session Chairs: Aurelia Ciupe

8:30

Work in Progress: Towards Enhancing Children's Science Education Using Augmented Reality and Computer Vision

Sahi Krishna Joshi (University of Eastern Finland, Finland)

Friday Joseph Agbo (University of Eastern Finland & Willamette University, Finland)

Ilkka Jormanainen (University of Eastern Finland, Finland)

8:48

Work in Progress: Using EEG to Determine Student Attention in the Classroom

Indumathi V (Engineering Institute of Technology, Australia)

9:06

Evaluation of Civil Engineering Students' Performance Comparing Online Versus On-Campus Delivery Mode

Indumathi V (Engineering Institute of Technology, Australia)

Ana Catarina Evangelista (Engineering Institute of Technology, Australia)

Shasha Wang (Engineering Institute of Technology, Australia)

9:24

Flipped Classroom Methodology as a Teaching Strategy in Education 4.0

Cristina Paez Quinde (Ambato & Instituto Superior Tecnológico España, Ecuador)

08:30 – 10:00

TS25: Work in Progress - Technology Application in Engineering Education

Room: Symphony Style Hotel, Room 10B

Session Chair: Sam Maesschalck

8:30

Work in Progress: Point Cloud Generation of Transparent Objects A Comparison Between Technologies

Bryan D. Sandoval-Gaytan (Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico)

Lili-Marlene Camacho (Tecnológico de Monterrey, Mexico)

Carlos Vázquez Hurtado (ITESM, Mexico)

8:48

Work in Progress: Using Kolb's Experiential Learning in Agile Software Development Course

Soma Datta (2700 Bay Area Blvd & University of Houston Clear Lake, USA)

9:06

Work in Progress: AWS DeepRacer: A Way to Understand and Apply the Reinforcement Learning Methods

Lydia A. Garza-Coello (Tecnologico de Monterrey, Mexico)

Marco Moreno Zubler (Tecnologico de Monterrey, Mexico)

Axayacatl Nava Montiel (Tecnologico de Monterrey, Mexico)

Carlos Vázquez Hurtado (ITESM, Mexico)

9:24

Work in Progress: Scientific Thinking Driven by Experiments on Video

Juan P. Trevino (Tecnológico de Monterrey & Puebla, Mexico)

Claudia Hernandez-Mena and Paulinna Faccinetto-Beltrán (Tecnologico de Monterrey, Mexico)

Andrea Trevino-Gutiérrez (The Churchil School and College, Mexico)

08:30 – 10:00

TS26: Innovation, Methods, Teaching and Learning Experiences in Engineering Education

Room: Symphony Style Hotel, Room 11A

Session Chair: Seyed Esmaeili

8:30

Pre-University Outreach in STEM Field Through Basic Electronics Hands-On Activities

Rajlaxmi Chouhan (Indian Institute of Technology Jodhpur, India)

8:48

Preliminary Study for Identifying Personnel for Innovative Software Engineering Project

Shahin Hasan (University of Malaya, Malaysia)
Raja Jamilah Raja Yusof (University of Malaya, Malaysia)
Hazrina Sofian (University of Malaya, Malaysia)
Unaizah Hanum (University of Malaya, Malaysia)
Azah Norman (University of Malaya, Malaysia)
Rodina Ahmad (Universiti Malaya, Malaysia)
Saaidal Razalli Azzuhri (University of Malaya, Malaysia)
Nazean Jomhari (Universiti Malaya, Malaysia)
Mohd Yamani Idna Idris (University of Malaya, Malaysia)
Siti Hafizah Ab Hamid (University of Malaya, Malaysia)
Asmiza Abdul Sani (University of Malaya, Malaysia)

9:06

Work in Progress: Application of CDIO and Experiential Learning Theory for Developing the Problem Solving Ability of Technicians in Manufacturing

Suebsai Suksong (KMUTT & Singha Beverage Co., Ltd., Thailand)
Komkrit Chomsuwan (King Mongkut's University of Technology Thonburi, Thailand)
Wutiporn Suamuang (King Mongkut's University of Technology Thonburi, Thailand)

9:24

Work in Progress: The Development of Problem-Solving Skills of a Mechatronic Maintenance Technician Using a Project-Based Learning (PjBL) to Reduce Waste in the Labeling Process

Narit Laksanapradit (Kmutt & Singha Beverage Co., Ltd., Thailand)
Komkrit Chomsuwan (King Mongkut's University of Technology Thonburi, Thailand)
Wutiporn Suamuang (King Mongkut's University of Technology Thonburi, Thailand)

9:42

Work in Progress: Towards A Gamified Tool for Multi-Campus Learning Activity Design

Abdullah Bahmani (The Norwegian University of Science and Technology (NTNU), Norway)
Rune Hjelmsvold (NTNU, Norway)

10:00 – 10:30

Coffee Break/Exhibits

Room: Symphony Style Hotel, 9th and 10th Floor

10:30 – 12:00

Round Table: Diversity, Equity, and Inclusion

Jennifer DeBoer, *Purdue University*
Aruquia Peixoto, *CEFET/RJ*
Carina Gonzalez, *IEEE Women in Engineering*
Room: AUK Theater

Session Chair: Rehab Elbahey

12:00 – 13:30

Awards, EDUCON 2024 Presentation and Closing Session

Edmundo Tovar, *Past President Jr, IEEE Education Society & UPM, Spain*
Christos Douligeris, *EDUCON 2024 Co-Chair*
Room: AUK Theater

Session Co-Chairs: Edmundo Tovar, Iyad Abu Doush, Amir Zeid, Mohammed El-Abd, and Manuel Castro

13:30 – 15:00

Lunch

Room: Symphony Style Hotel