

# Awards

## Dear colleagues of EDUCON 2021:



As IEEE EDUCON Steering Committee Chair, IEEE Education Society President Emeritus and IEEE Division VI Past Director I would like to thank the Awards Committee members of the conference Alberto Cardoso, Vladimir Geroimenko, Russ Meier and Maria Teresa Restivo for their impressive work in this pandemic time. I would like to send my condolences to all the affected during the coronavirus pandemic and specially I would like to thank to the General Chairs of the conference (Thomas Klinger, Christian Kollmitzer and Andreas Pester) as well as to all the volunteers of the different committees for their invaluable work that allow to have a very good online conference. This is the second online conference of the IEEE EDUCON (2020 and 2021) and as we had in mind to organize this conference in hybrid mode (having attendees face-to-face in Vienna) at the end we must take the healthiest option and to have the event fully online.

And is a great pleasure to include the list of the Awards of IEEE EDUCON 2021 (IEEE Global Engineering Education Conference) inside the proceedings published at IEEE Xplore:

<https://ieeexplore.ieee.org/xpl/conhome.jsp?punumber=1800058>

Congratulations to all the Awardees. Their efforts and dedication help us to have a better conference year to year. Here you have the complete list of the Awards of the conference.

The conference IEEE EDUCON start in 2010 with the first conference in Madrid, Spain, and is rotating along all IEEE Region 8 from Europe to Middle East and to Africa, going until now from Madrid to Amman, Marrakesh, Berlin, Istanbul, Tallinn, Abu Dhabi, Athens, Tenerife, Dubai and in 2020 with the online event organized from Porto (Portugal) and in 2021 with the online event organized from Vienna (Austria). We will go in 2022 to Tunisia, going back to Africa again, as well as in 2023 to Kuwait, and we expect to have both conference in hybrid mode.

During the 2021 conference we did a new step in the new conferences organization and we expect that this will be the last EDUCON online, having the event with a lot of interaction and finding good options for all the activities of the conference. In numbers, the conference has minimum differences with the expected one, and the conference follow the same structure or the face-to-face one. The community of the IEEE Education Society in IEEE Region 8 maintain their strong support and connections, and this year we have the honor of the attendance of the IEEE Region 8 Director (Antonio Luque), the IEEE Region 8 Past Director (Magdalena Salazar) as well as the President of the IEEE Education Society (Edmundo Tovar), the Past President Jr (Russ Meier) and the President Elect (Martin Llamas) as well as the IEEE Education Society Vice President of Conferences (Henrique Santos). The EDUCON 2021 has a high attendance with more than 300 attendees and a strong community of Engineering Education inside IEEE Region 8.

Our relations with the other conferences of the IEEE Education Society continue being stronger, as we have with Frontier in Education, (FIE), (October 2021 in Lincoln, NE, USA), IEEE Learning with MOOCs (LWMOOCs), (September 2021 in Antigua, Guatemala), IEEE Teaching, Assessment and Learning for Engineering (TALE), (December 2021 in Wuhan, China) and IEEE World Engineering Education Conference (EDUNINE), (March 2021 in Guatemala City, Guatemala).

Thanks again to all the people and volunteers involved in the conference they do a very magnificent work. Technical quality of paper and presentations was impressive due to the previous work of the authors, reviewers, program committee members, organizing members, session chairs, and attendees. We miss the social networking and the visits to the opera, museums, gardens and monuments. Vienna will be in our target for a travel in the close future.

### **Manuel Castro**

IEEE EDUCON 2021 Steering Committee Chair

## EDUCON Meritorious Service Award

2021 recipients are **Andreas Pester** and **Matthias C. Utesch** for outstanding contributions to the administrative and management efforts for the IEEE EDUCON conference.

## Best Paper Awards

Best Paper Awards are appointed in the following categories:

- Infrastructure and Technologies for Engineering Education
- Innovation, Methods, Teaching and Learning Experiences in Engineering Education
- Attracting, Engaging and Retaining Human Talent to Engineering
- Serious Games, Game-Based Learning and Gamification for Engineering Education
- Virtual and Remote Labs (V&RL) in Engineering Education
- Assessment in Engineering Education
- Best Student Paper
- Most Innovative Paper regarding Engineering Education
- Most Cited Paper Award 2021
- Best Video Awards

### Area 1: Infrastructure and Technologies for Engineering Education

**The International Impact of COVID-19 and "Emergency Remote Teaching" on Computer Science Education Practitioners**

Tom Crick, Cathryn Knight, Richard Watermeyer, Janet Goodall

(Organizations: Swansea University, United Kingdom; University of Bristol, United Kingdom)

### Area 2: Innovation, Methods, Teaching and Learning Experiences in Engineering

**Evaluation of the COVID-19 Shock on STEM Laboratory Courses**

Yunfei Hou, Fadi Muheidat, Timothy Usher, Wagner Prado, Xiaofei Guo, Montgomery Van Wart

(Organization: California State University San Bernardino, USA)

### Area 3: Attracting, Engaging and Retaining Human Talent to Engineering

**Widening Young People' Aspirations for STEM and DIGITAL Careers: A Case Study of the DIGISTEM Project**

Opeyemi Dele-Ajai, Emma Anderson, Victor Ayodele, Femi Alufa, Rebecca Strachan, Akachukwu Okoli, Kemi Fasae

(Organizations: Northumbria University, United Kingdom; Stemres Learning, Nigeria)

### Area 4: Serious Games, Game-Based Learning and Gamification for Engineering Education

**A Serious Game for Mobile Phones used in a Software Engineering Course: Usability Evaluation and Educational Effectiveness**

Semira Maria Evangelou, Georgia Stamoulakatou, Michalis Xenos

(Organization: University of Patras, Greece)

**Commendation: Work-in-Progress: A Novel Data Glove for Psychomotor-Based Virtual Medical Training**

Kyle Wilcocks, Argyrios Perivolaris, Bill Kapralos, Alvaro Quevedo, Michael Jenkin, Kamen Kanev, Hidenori Mimura, Makoto Hosoda, Fahad Alam, Adam Dubrowski

(Organizations: Ontario Tech University, Canada; University of Toronto, Canada; York University, Canada; Shizuoka University, Japan; Sunnybrook Health Sciences Centre, Canada)

# Awards

## Most Innovative Paper regarding Engineering Education

**Co-Award: Towards a Cloud-Based University Accelerated By the Pandemic**

Carlos Delgado Kloos, Carlos Alario-Hoyos, Carmen Fernández-Panadero, Pedro J. Muñoz-Merino, Iria Estévez-Ayres, Mario Muñoz-Organero, María Blanca Ibáñez, Pedro Manuel Moreno-Marcos, Boni García  
(Organization: Universidad Carlos III de Madrid, Spain)

**Co-Award: A Hybrid and Flexible Teaching Model for Engineering Courses Suitable for Pandemic Conditions towards the New Normality**

Miguel X. Rodriguez-Paz, Jorge A. Gonzalez-Mendivil, Israel Zamora-Hernandez, Benjamin Sanchez  
(Organization: Tecnológico de Monterrey, Mexico)

## Best Student Paper Award

**Providing Learning Success as a Service: A Structured Literature Review**

Sophie Heim, Clemens Drieschner, Holger Wittges, Helmut Krcmar  
(Organization: Technical University of Munich, Germany)

## Most Cited Paper Award 2021

**Virtual reality in engineering education: The future of creative learning (EDUCON 2011)**

Abdul-Hadi Ghazi Abulrub, Alex Attridge and Mark A. Williams  
(Organization: International Manufacturing Centre, University of Warwick, Coventry, UK)

## Best Video Award

**Hua Chai**

(Organization: University of New South Wales, Australia)

**Commendation: Annaliza Enocia Catacutan-Bangit**

(Organization: National University, Philippines)