CONFERENCE PROGRAM

Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

8:30AM - 6:00PM

IN PERSON On Site Registration

EDUNINE 2025
IX IEEE WORLD ENGINEERING EDUCATION CONFERENCE

Montevideo, Uruguay – 23-26 March 2025

IEEE Education Society

COPEC Science and Education Research Organization

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Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

9:00AM - 10:30AM

IN PERSON English Technical Session #17

Chairs: David Cutting, Martin Solari

Argentina 09:00AM	Australia 10:00PM	Bolivia 08:00AM	Brazil 09:00AM	Canada 05:00AM
Chile 09:00AM	China 08:00PM	Colombia 07:00AM	Costa_Rica 06:00AM	Ecuador 07:00AM
Germany 01:00PM	Greece 02:00PM	Guatemala 06:00AM	Indonesia 07:00PM	Ireland 12:00PM
Israel 02:00PM	Mexico 06:00AM	Peru 07:00AM	Philippines 08:00PM	Portugal 12:00PM
Senegal 12:00PM	Spain 01:00PM	Singapore 08:00PM	Sweden 01:00PM	Trinidad_Tobago 08:00AM
Tunisia 01:00PM	United_Kingdom 12:00PM	USA-CDT 08:00AM	USA-PDT 05:00AM	USA-EDT 08:00AM
USA-MDT 06:00AM	USA-HST 02:00AM			

Local Time	Presentation

9:00AM **Presented by** **Ruth Schorr**

Title: **Work in Progress: Enhancing Students' Learning Experience in Formal Methods through Practical Assignments (Paper # 935)**

Autored by Ruth Schorr

Abstract

Formal methods are crucial for ensuring higher integrity levels for safety-critical systems. However, teaching these methods can be quite challenging. Students often show low motivation and are primarily focused on passing formal methods courses with minimal effort. Performance in compulsory formal methods courses is usually below average, with students perceiving the subject as overly mathematical and lacking practical relevance. To address these challenges and enrich the learning experience, we have integrated mandatory group homework assignments into our teaching framework. Students are required to work collaboratively on case studies and present their solutions during class. This work-in-progress paper provides an experience report on enhancing the learning possibilities of master's students in a model checking course at the Frankfurt University of Applied Sciences (FRA-UAS).

Presentation time 15 minutos and 5 minutes for Q&A

09:20AM **Presented by** **David Cutting**

Title: **A toolchain for the in-house education of cloud computing in a vendor agnostic and efficient manner (Paper # 937)**

Autored by David Cutting, Edson Lobo De Pina, Esha Barlaskar, Andrew McDowell, Neil Anderson

Abstract

Adoption of cloud computing has led to increased demand by industry for cloud-ready graduates and pressure on universities to include cloud in their curriculum. While industry courses exist, these are almost all vendor specific and often require payment for access to resources and an exam fee, requiring expenditure every iteration. The focus of industry courses, especially certification, is narrow compared to a general cloud computing course, with little background or deep learning. Here we present how to implement a vendor agnostic in-house cloud environment which allows teaching of theory and practice for modest capital investment which can be used in future. The approach creates a scalable private cloud in which workloads can be deployed and concepts explored with no licencing costs. Used successfully for over five years and refined through feedback this can act as a robust toolchain blueprint for others to use and tailor to their needs.

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Presentation time 15 minutos and 5 minutes for Q&A

09:40AM **Presented by** **Shaimaa Ali**

Title: **Work in Progress: Using a Variety of Teaching and Learning Strategies to Teach Cloud Computing to Software Engineering Students – An Experience Report (Paper # 1031)**

Autored by Shaimaa Ali

Abstract *The fast growth of the cloud computing industry made the corresponding skills essential for software engineers, and including cloud computing in the software engineering curriculum is unavoidable. However, the novelty of the topics and the fast pace of changes in the industry pose significant challenges in teaching the subject. The experience reported in this paper demonstrates an example of employing a variety of teaching and learning strategies that lead to a high degree of satisfaction among the students.*

Presentation time 15 minutos and 5 minutes for Q&A

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9:00AM - 10:30AM

IN PERSON English Technical Session #18

Chair: Carla M.A. Pinto

Argentina 09:00AM	Australia 10:00PM	Bolivia 08:00AM	Brazil 09:00AM	Canada 05:00AM
Chile 09:00AM	China 08:00PM	Colombia 07:00AM	Costa_Rica 06:00AM	Ecuador 07:00AM
Germany 01:00PM	Greece 02:00PM	Guatemala 06:00AM	Indonesia 07:00PM	Ireland 12:00PM
Israel 02:00PM	Mexico 06:00AM	Peru 07:00AM	Philippines 08:00PM	Portugal 12:00PM
Senegal 12:00PM	Spain 01:00PM	Singapore 08:00PM	Sweden 01:00PM	Trinidad_Tobago 08:00AM
Tunisia 01:00PM	United_Kingdom 12:00PM	USA-CDT 08:00AM	USA-PDT 05:00AM	USA-EDT 08:00AM
USA-MDT 06:00AM	USA-HST 02:00AM			

Local Time	Presentation

9:00AM **Presented by** **Carla M.A. Pinto**

Title: **Work in Progress: Exploring Educators' Perceptions on Generative Artificial Intelligence in Higher Education (Paper # 919)**

Autored by Jorge Mendonça, Lurdes Babo, Carla M.A. Pinto, Mário Cruz, Ricardo Queirós, Daniela Mascarenhas

Abstract *This study examines educators' views on integrating Generative Artificial Intelligence in Higher Education. A questionnaire was distributed across disciplines to explore AI adoption in pedagogy, common tools, and perceived benefits and challenges. While AI research often focuses on STEAM fields and K-12 education, this study includes Humanities, Sciences, and Business. The primary question investigates educators' experiences and concerns about AI in classrooms. The sample comprises 134 teachers (balanced by sex), aged 27-71. Descriptive and inferential statistics, including Chi-square and Mann-Whitney tests, analyze the data. The findings show increasing AI participation, especially among male teachers, using tools such as ChatGPT and Google Bard. Despite the benefits, concerns remain about ethics, human interaction, equity, and professional development. This study offers insights applicable to institutions worldwide and encourages further exploration of AI's role in higher education.*

Presentation time 15 minutos and 5 minutes for Q&A

09:20AM **Presented by** **Ismael Garrido**

Title: **“AutoGrade”: an AI-Based Assessment Tool for Computer Science 1 (Paper # 921)**

Autored by Inés Friss de Kereki, Ismael Garrido

Abstract *Assessment is a crucial element of the educational process. This study explores the use of AI to assist in grading midterms for the Computer Science I course. Currently, midterms are conducted in person, on paper, closed book, and are graded using detailed rubrics. With an increasing number of students and teachers, an AI tool for an initial grading could enhance speed and accuracy for all teachers. The goal is to achieve preliminary grading according to a rubric, which a teacher then validates. This paper details the course and the process, including an application that facilitates uploading photos of students’ tests, transcribing images, allows uploading a rubric, and applying it. In the experiment conducted, 24 student exercises were considered, using a rubric with 7 criteria. Results show an 85% agreement between the application of the rubric by AI and the teacher (143 out of 168 criterion). Recommendations and*

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conclusions are provided.

Presentation time 15 minutos and 5 minutes for Q&A

09:40AM **Presented by** **Laíza Ribeiro Silva**

Title: **PBL in the Development of a Sensory Mat for Children with Cerebral Palsy (Paper # 926)**

Autored by Túlio Araújo de Medeiros Brito, Henrique Mohallem Paiva, Laíza Ribeiro Silva

Abstract *This article studies the use of Project-Based Learning (PBL) in developing an application in biomedical engineering, aiming to demonstrate its efficiency in this field. Undergraduate computer science students developed a sensory mat to provide children with cerebral palsy with an easy way to communicate basic needs such as thirst, hunger, or a request for attention. Agile values and the Scrum framework were employed to manage project execution and ensure the goal remained clear. The benefits of this educational approach are discussed, particularly its effectiveness in delivering technical content and motivating students. Additionally, challenges related to staff mentoring, infrastructure, and framework usage are examined.*

Presentation time 15 minutos and 5 minutes for Q&A

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ONLINE English Technical Session #19

Chairs: Agatha Clarice da Silva Ovando

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Chile 09:00AM	China 08:00PM	Colombia 07:00AM	Costa_Rica 06:00AM	Ecuador 07:00AM
Germany 01:00PM	Greece 02:00PM	Guatemala 06:00AM	Indonesia 07:00PM	Ireland 12:00PM
Israel 02:00PM	Mexico 06:00AM	Peru 07:00AM	Philippines 08:00PM	Portugal 12:00PM
Senegal 12:00PM	Spain 01:00PM	Singapore 08:00PM	Sweden 01:00PM	Trinidad_Tobago 08:00AM
Tunisia 01:00PM	United_Kingdom 12:00PM	USA-CDT 08:00AM	USA-PDT 05:00AM	USA-EDT 08:00AM
USA-MDT 06:00AM	USA-HST 02:00AM			

Local Time	Presentation	Speaker Time

9:00AM **Presented by** **Hong Liu, Trina Kershaw** **USA-EDT 08:00AM**

Title: **Co-Creation as a Catalyst for Learning and Applying Wireless Network Concepts (Paper # 941)**

Autored by Trina Kershaw, Hong Liu

Abstract *This paper summarizes the impact of co-creating educational materials about wireless network concepts on graduate and undergraduate computer engineering students. Co-creating can provide benefits for faculty and students by increasing engagement, but there are also challenges with the process. This paper explains how faculty and students collaborated to co-create online educational modules about wireless network concepts. By co-creating with faculty members, graduate students broadened their understanding of cyber-physical systems, strengthened their research skills, and gained experience with teaching-related activities. This paper also presents pilot data about the integration of the co-created materials into advanced undergraduate and graduate computer engineering courses. By learning from the co-created materials, students showed learning gains that were similar to students who learned from traditional publisher-provided materials. Further, their class project choices reflected themes about wireless networking which had not been seen in previous iterations of these courses.*

Presentation time 15 minutos and 5 minutes for Q&A

09:20AM **Presented by** **Aristides Vagelatos** **Greece 02:20PM**

Title: **Innovation Centers: Designing a New Learning Space for Primary/Secondary Education in Greece (Paper # 997)**

Autored by Aristides Vagelatos, Zacharoula Smyrnaiou, Ioannis Kostikas

Abstract *After the COVID-19 pandemic, which disrupted traditional classroom practices and strengthened the move towards digital education and e-learning, the educational environment is confronted with both opportunities and problems on a worldwide and European Union level. In reaction to these developments, the European Union has unveiled the "Digital Education Action Plan (2021-2027)" to improve teachers' and students' digital literacy with the goal of encouraging the use of cutting-edge*

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technology in the classroom and establishing a more welcoming and accessible learning environment. Within this framework, the establishment of a new Learning Space, named Innovation Centers (ICs), for primary/secondary education is an important step for Greece. These new learning establishments will serve as centers for research, experimentation, and cooperation, allowing educators and students to investigate novel approaches, take advantage of state-of-the-art technologies, and enhance educational opportunities and experiences.

Presentation time 15 minutos and 5 minutes for Q&A

09:40AM **Presented by** **Thierry KONDENGAR** **Senegal 12:40PM**

Title: **Facial Recognition for Automated Attendance Management: A Solution Adapted to Senegalese Educational Environments (Paper # 1035)**

Autored by Thierry Kondengar, Mamadou Ba, Abagana Mahamat Kachallah, Ismaila Fall, Samuel Ouya

Abstract *This research proposes an automated attendance management solution using facial recognition, adapted to the Senegalese educational system. Given the challenges of traditional methods in overcrowded classrooms, our approach integrates artificial intelligence through the OpenCV DNN module, offering a balance between accuracy and required resources. The developed architecture combines an intuitive user interface, real-time video processing, and automated report generation, based on a Flask server and MySQL infrastructure. The solution adapts to local constraints, particularly ethnic diversity, and integrates with existing surveillance systems. Tests demonstrate high accuracy in facial detection while respecting ethical considerations and the Senegalese legal framework for personal data protection, thus contributing to the modernization of the educational system.*

Presentation time 15 minutos and 5 minutes for Q&A

10:00AM **Presented by** **Thierry KONDENGAR** **Senegal 01:00PM**

Title: **Making the Most of Digital Terrestrial Television for Education: Interactive Learning Channels in Response to Interruptions in School Activities. (Paper # 1037)**

Autored by Abagana Mahamat Kachallah, Thierry Kondengar, Mamadou Ba, Ibra Dioum, Samuel Ouya

Abstract *In Senegal, "Télédiffusion du Sénégal" (TDS) is the national operator managing the collection, multiplexing, transport, and broadcasting of digital audiovisual content. With fixed internet coverage limited to 1.2% [1], this study presents an innovative distance learning solution using Digital Terrestrial Television (DTT), which has a penetration rate exceeding 90%. The approach combines course broadcasting via DTT with a WebRTC platform for real-time interactions between students and teachers. Internet usage is minimized, activated only when students ask questions, significantly reducing connectivity costs. Tests confirm the system's feasibility, enabling real-time communication, screen sharing, and the dissemination of educational materials. For rural areas, solutions such as community access points and Software-Defined Radio (SDR) networks are proposed. Future plans aim to develop an integrated student tracking system to optimize the distance learning experience, making education*

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more accessible and cost-effective in underserved regions.

Presentation time 15 minutos and 5 minutes for Q&A

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9:00AM - 10:30AM

ONLINE English Technical Session #20

Chair: Oscar Karnalim

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Chile 09:00AM	China 08:00PM	Colombia 07:00AM	Costa_Rica 06:00AM	Ecuador 07:00AM
Germany 01:00PM	Greece 02:00PM	Guatemala 06:00AM	Indonesia 07:00PM	Ireland 12:00PM
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Senegal 12:00PM	Spain 01:00PM	Singapore 08:00PM	Sweden 01:00PM	Trinidad_Tobago 08:00AM
Tunisia 01:00PM	United_Kingdom 12:00PM	USA-CDT 08:00AM	USA-PDT 05:00AM	USA-EDT 08:00AM
USA-MDT 06:00AM	USA-HST 02:00AM			

Local Time	Presentation	Speaker Time

9:00AM **Presented by** **Oscar Karnalim** **Indonesia 07:00PM**

Title: **Work in Progress: High School Student Perspective on AI-based Plagiarism (Paper # 923)**

Autored by Oscar Karnalim, Robby Yussac Tallar, Pin Panji Yapinus, Markus Tanubrata, Hendry Wong

Abstract *In the Artificial Intelligence (AI) era, students can become more productive. However, maintaining academic integrity becomes more complicated: students could easily plagiarize AI-generated solutions. Several strategies can be applied to maintain academic integrity. However, it is important to understand students' perspectives about AI-based plagiarism first. Many relevant studies have been conducted on higher education, but to our knowledge, none of them are focused on K-12 education. This work-in-progress study reports the perspective of 99 K-12 students about AI-based plagiarism. We found that students were relatively aware of AI-based plagiarism, and the policies could be easily expanded from those of conventional plagiarism. Students needed to be explicitly informed that disguising and expanding AI-generated work was unacceptable for individual assessments that restrict the use of AI. It was also unacceptable to ask AI to fix a troublesome solution.*

Presentation time 15 minutos and 5 minutes for Q&A

09:20AM **Presented by** **Ganesh Neelakanta Iyer** **Singapore 08:20PM**

Title: **On the Design of a Data Engineering Learning Platform Using Web Technologies and LLMs (Paper # 996)**

Autored by Jia Yi Venus Lim, Ganesh Neelakanta Iyer

Abstract *As data surge, the demand for skilled data engineers significantly increases, underscoring the importance of data engineering. However, learning data engineering skills can be daunting due to the complexity of setting up multiple platforms, often unnecessary as companies typically employ other professionals to handle infrastructure. Additionally, data engineering is rarely taught in traditional educational settings, leaving interested students at a disadvantage. To address this, this project aims to develop a web-based platform that simplifies data engineering learning,*

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providing hands-on experience for free without complex setups for users from different backgrounds. The platform includes a Large Language Model (LLM)-powered chatbot for real-time guidance, creating an interactive learning environment. With access to our platform, users can instantly access the necessary tools and resources. Typically, a web page will have everything required for a course, streamlining the virtual learning process and reducing setup time.

Presentation time 15 minutos and 5 minutes for Q&A

09:40AM **Presented by** **Gwen Lianna Valimento** **Philippines 08:40PM**

Title: **The Sweet Spot: Optimal Video Length for Sustaining Student Views and Efficient Production (Paper # 1014)**

Autored by Iris Ann Martinez, Gwen Lianna Valimento

Abstract

This study examines the optimal length for educational videos to enhance student viewing and efficient production. While shorter videos are often preferred, they require more time to cover topics comprehensively. Contrary to previous studies recommending fixed short videos, this study hypothesizes that students watch longer videos proportionally. Analytics from over 100 videos showed an average watch time of 65.76% for videos ranging from 6 to 30 minutes. This challenges the idea of fixed short videos. The study proposes a video production plan with a Takt Time of 30 minutes as the maximum length to maximize efficiency and ensure timely availability.

Presentation time 15 minutos and 5 minutes for Q&A

10:00AM **Presented by** **Kin-Hon Ho** **China 09:00PM**

Title: **Work in Progress: Unlocking Code Generation Through Synergistic Prompt Engineering (Paper # 1023)**

Autored by Kin-Hon Ho, Michael Georgiades, Tsz-Kin Justin Fan, Yun Hou, Ken C. K. Fong, Tse-Tin Chan

Abstract

Prompt engineering is crucial for optimizing large language models in code generation. This paper explores a synergistic prompt engineering approach that integrates complementary prompting techniques for solving programming problems. Preliminary experiments show that by leveraging the strengths of various prompting techniques, our synergistic approach significantly outperforms traditional single-prompting techniques, improving the accuracy of code generation for Python and C++ exercises. These findings suggest that our synergistic approach is a valuable tool for students to enhance their interactions with large language models and benefit AI-driven programming education.

Presentation time 15 minutos and 5 minutes for Q&A

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9:00AM - 10:30AM

ONLINE English Technical Session #21

Chair: Michael Winokur

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Chile 09:00AM	China 08:00PM	Colombia 07:00AM	Costa_Rica 06:00AM	Ecuador 07:00AM
Germany 01:00PM	Greece 02:00PM	Guatemala 06:00AM	Indonesia 07:00PM	Ireland 12:00PM
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Senegal 12:00PM	Spain 01:00PM	Singapore 08:00PM	Sweden 01:00PM	Trinidad_Tobago 08:00AM
Tunisia 01:00PM	United_Kingdom 12:00PM	USA-CDT 08:00AM	USA-PDT 05:00AM	USA-EDT 08:00AM
USA-MDT 06:00AM	USA-HST 02:00AM			

Local Time	Presentation	Speaker Time

9:00AM **Presented by** **Saeid Moslehpour** **USA-EDT 08:00AM**

Title: **SWOT Analysis of Artificial Intelligence in Education (Paper # 984)**

Autored by Jorge Ortega-Moody, Kouroush Jenab, Saeid Moslehpour, Lizeth Del Carmen Molina Acosta, Edward Jhohan Marin Garcia, José Neftalí Torres Marin

Abstract *Artificial Intelligence (AI) is a transformative technology with significant potential in the field of education. However, its integration into educational systems has sparked debates over its benefits and drawbacks. This paper employs a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis to explore the implications of AI in education. The analysis identifies AI's ability to personalize learning, improve efficiency, and expand access to education as key strengths. Conversely, weaknesses include the risks of dependency, ethical concerns, and inaccuracies. Opportunities lie in the advancement of adaptive learning systems and the development of ethical guidelines. Threats include potential misuse, equity challenges, and resistance to adoption. This study provides insights into the responsible implementation of AI in education and outlines strategies to maximize its benefits while addressing its challenges.*

Presentation time 15 minutos and 5 minutes for Q&A

09:20AM **Presented by** **Farah Villa-Lopez** **United_Kingdom 12:20PM**

Title: **e-Assessments in Engineering – Awarding partial marks in online quizzes (Paper # 987)**

Autored by Farah H Villa Lopez, Timothy A Vincent

Abstract *The move to e-assessments was accelerated during the Covid-19 pandemic, however, the extra workload to convert paper-based assessments to digital quizzes meant their implementation lacked the refinement of a traditional mark-scheme. Engineering examinations must assess students' problem-solving ability and allocate marks for both correct solutions and working. Partial marks must be awarded, to avoid a binary cut-off between a completely correct answer and one with minor errors. Here, we implemented a Moodle quiz designed to allocate weighted marks to partially correct responses despite common errors being made. In a*

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cohort of 96 students, 89 received an improved mark with this partial-marking implementation. 40% of students improved their grade, and the failure rate dropped from 22% to 13%, demonstrating the importance of awarding marks for follow-through errors. We believe this work highlights the need for careful design of e-assessments to ensure the resulting grades awarded to students are appropriate and valid.

Presentation time 15 minutos and 5 minutes for Q&A

09:40AM **Presented by** **Michael Winokur** **Israel 02:40PM**

Title: **Work in Progress: AI-Powered Engineering-Bridging Theory and Practice (Paper # 989)**

Autored by Oz Levy, Ilya Dikman, Natan Levy, Michael Winokur

Abstract

This paper explores how generative AI can help automate and improve key steps in systems engineering. It examines AI's ability to analyze system requirements based on INCOSE's "good requirement" criteria, identifying well-formed and poorly written requirements. The AI does not just classify requirements but also explains why some do not meet the standards. By comparing AI assessments with those of experienced engineers, the study evaluates the accuracy and reliability of AI in identifying quality issues. Additionally, it explores AI's ability to classify functional and non-functional requirements and generate test specifications based on these classifications. Through both quantitative and qualitative analysis, the research aims to assess AI's potential to streamline engineering processes and improve learning outcomes. It also highlights the challenges and limitations of AI, ensuring its safe and ethical use in professional and academic settings.

Presentation time 15 minutos and 5 minutes for Q&A

10:00AM **Presented by** **Frances Sheridan** **Ireland 01:00PM**

Title: **Work in Progress: Computational Thinking Skills Assessment in Higher Education (Paper # 991)**

Autored by Frances Sheridan, Paul Stynes, Pramod Pathak, Keith Quille

Abstract

The goal of this research is to identify a tool for use in assessing Computational Thinking Skills in undergraduate Computing students. To measure the effectiveness of interventions for the development of Computational Thinking skills, there is a need for valid and reliable assessment tools. Much of the research to date has been concentrated in primary and secondary education with a shortfall in research for higher education settings. This research aims to try and address this gap and is comprised of three main stages: a literature review; a pre-pilot study; and a pilot study. The literature review identified a validated tool with potential for use with undergraduate Computing students. The pre-pilot and pilot studies invited participants to engage with the tool, but engagement was limited with low participation rates. This paper examines the reasons for this and explores possible ways to move the research forward considering these challenges.

Presentation time 15 minutos and 5 minutes for Q&A

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10:30AM - 11:00AM

HYBRID Coffee Break

Argentina 10:30AM	Australia 11:30PM	Bolivia 09:30AM	Brazil 10:30AM	Canada 06:30AM
Chile 10:30AM	China 09:30PM	Colombia 08:30AM	Costa_Rica 07:30AM	Ecuador 08:30AM
Germany 02:30PM	Greece 03:30PM	Guatemala 07:30AM	Indonesia 08:30PM	Ireland 01:30PM
Israel 03:30PM	Mexico 07:30AM	Peru 08:30AM	Philippines 09:30PM	Portugal 01:30PM
Senegal 01:30PM	Spain 02:30PM	Singapore 09:30PM	Sweden 02:30PM	Trinidad_Tobago 09:30AM
Tunisia 02:30PM	United_Kingdom 01:30PM	USA-CDT 09:30AM	USA-PDT 06:30AM	USA-EDT 09:30AM
USA-MDT 07:30AM	USA-HST 03:30AM			

Duration: 30 minutes. Join us on time!

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11:00AM - 12:30PM

IN PERSON English Technical Session #22

Chair: Rosa M. Vasconcelos

Argentina 11:00AM	Australia 27 Mar, 12:00AM	Bolivia 10:00AM	Brazil 11:00AM	Canada 07:00AM
Chile 11:00AM	China 10:00PM	Colombia 09:00AM	Costa_Rica 08:00AM	Ecuador 09:00AM
Germany 03:00PM	Greece 04:00PM	Guatemala 08:00AM	Indonesia 09:00PM	Ireland 02:00PM
Israel 04:00PM	Mexico 08:00AM	Peru 09:00AM	Philippines 10:00PM	Portugal 02:00PM
Senegal 02:00PM	Spain 03:00PM	Singapore 10:00PM	Sweden 03:00PM	Trinidad_Tobago 10:00AM
Tunisia 03:00PM	United_Kingdom 02:00PM	USA-CDT 10:00AM	USA-PDT 07:00AM	USA-EDT 10:00AM
USA-MDT 08:00AM	USA-HST 04:00AM			

Local Time	Presentation

11:00AM **Presented by** **Martin Solari**

Title: **Active Learning Methodology for Advanced Agile Software Engineering and DevOps Practices (Paper # 948)**

Autored by Juan Ignacio Irabedra, Martin Solari

Abstract *Creation of digital products and services requires today high-performance interdisciplinary teams that respond quickly to customer needs. This context presents a great challenge for software engineering education, where it seeks to give students an active learning environment of professionally relevant and technologically updated skills. This report presents a classroom experience with a focus on active learning pedagogical strategies for advanced agile software engineering and DevOps practices. The instructional design of the course was based on two main pedagogical methodologies: Team-Based Learning and Project-Based Learning. The course was developed on digital platforms that support both the pedagogical approach and software engineering teamwork and software quality practices. Evaluation was carried out from both teacher's and student's perspectives, using quantitative and qualitative analysis. Lessons learned from the experience are presented to enable adoption of these active learning methodologies in other software engineering courses.*

Presentation time 15 minutos and 5 minutes for Q&A

11:20AM **Presented by** **Andrew Valentine**

Title: **Bibliometric study of publications in English-language engineering education journals, by authors from Latin America 2004-2023 (Paper # 955)**

Autored by Andrew Valentine, Bill Williams

Abstract *Engineering education research has grown significantly over the past 20 years, notably in the US, Europe, and Australia, with increased contributions from Latin American researchers. This study analyzes these contributions, applying bibliometric methods to track Latin American authors' publications in 18 English-language journals from 2004 to 2023. The data shows a nearly 400% increase in output, stabilizing over the past three years. Brazil and Mexico have led in publications, followed by Chile, Colombia, and Argentina. Journals focused on discipline-based research, particularly in computer science and electrical engineering, are the primary publication venues. The most frequent co-authorships occur with Spain, Portugal, and the United States. While the most common keywords have remained stable, "project-based learning" has gained*

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prominence over the last decade. These findings provide a baseline for monitoring the growth of engineering education research by Latin American scholars in the coming years.

Presentation time 15 minutos and 5 minutes for Q&A

11:40AM **Presented by** **Rosa M. Vasconcelos**

Title: **Work in Progress: Participative "turn" in (AI) Engineering (Paper # 969)**

Autored by Rosa M. Vasconcelos, Emília Araújo, Paula Urze

Abstract *This research-in-progress paper explores the perceptions of AI experts regarding the relevance of social engagement for AI innovation. It focuses on the complexities and challenges introduced into engineering education avoiding the risks of using social engagement as a tool for acceptance, rather than as a method for community co-creation and participation. It tackles this by discussing the results of a narrative literature review and interviews with AI experts*

Presentation time 15 minutos and 5 minutes for Q&A

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Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

11:00AM - 12:30PM

IN PERSON Spanish Technical Session #23

Chairs: Marcelo Guerra Hahn

Argentina 11:00AM	Australia 27 Mar, 12:00AM	Bolivia 10:00AM	Brazil 11:00AM	Canada 07:00AM
Chile 11:00AM	China 10:00PM	Colombia 09:00AM	Costa_Rica 08:00AM	Ecuador 09:00AM
Germany 03:00PM	Greece 04:00PM	Guatemala 08:00AM	Indonesia 09:00PM	Ireland 02:00PM
Israel 04:00PM	Mexico 08:00AM	Peru 09:00AM	Philippines 10:00PM	Portugal 02:00PM
Senegal 02:00PM	Spain 03:00PM	Singapore 10:00PM	Sweden 03:00PM	Trinidad_Tobago 10:00AM
Tunisia 03:00PM	United_Kingdom 02:00PM	USA-CDT 10:00AM	USA-PDT 07:00AM	USA-EDT 10:00AM
USA-MDT 08:00AM	USA-HST 04:00AM			

Local Time	Presentation

11:00AM **Presented by** **Lornel Antonio Rivas Mago**

Title: **Evaluation of Critical Success Factors for engineering programs improvement plans (Paper # 939)**

Autored by Lornel Antonio Rivas Mago, Monica Marca Aima, Luis Eduardo Mendoza Morales

Abstract

Improvement Plans (IP) should be collaboratively developed and efficiently managed to enhance engineering programs. This study evaluates a Critical Success Factors (CSFs) model for the formulation, monitoring, and control of IPs. The model includes 6 CSFs (Stakeholders, Processes, Information, Improvement Actions, Participation and Communication, and Institution) and 47 metrics, evaluated by 7 experts in engineering program quality. Experts assessed the CSFs on Relevance and Pertinence, and the metrics on Correctness of scale and Objectivity. Results show: (a) all CSFs were relevant and pertinent, (b) the metrics had an acceptance rate of 86.9%, (c) the Objectivity rating was 80.3%, and (d) Correctness of the scale reached 63.8%. This led to the revision of 33 metrics and the inclusion of four new ones, refining the model for better decision-making in IP management.

Presentation time 15 minutos and 5 minutes for Q&A

11:20AM **Presented by** **Marcelo Guerra Hahn**

Title: **Work in Progress: Investigating ChatGPT for Grading Algebra Problems (Paper # 974)**

Autored by Marcelo Guerra Hahn

Abstract

This work-in-progress paper investigates the integration of ChatGPT, an advanced AI language model, as a grading tool for algebra problems in educational settings. From an academic perspective, the study examines the model's ability to assess a range of algebraic tasks, including solving equations, simplifying expressions, and evaluating word problems. To ensure applicability within a structured learning environment, a pilot implementation is proposed within an existing course, where students are divided into two groups: an Experimental Group, graded using ChatGPT-enhanced feedback, and a Control Group, assessed through traditional human grading. The study evaluates the accuracy, consistency, and feedback quality of AI-driven grading compared to conventional assessment methods. Key areas of analysis include the AI's ability to provide partial credit for alternative solutions, interpret symbolic algebraic notation, and address common student errors. By applying structured evaluation instruments to both

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groups, the research assesses the feasibility of AI-supported grading in improving grading efficiency while maintaining assessment fairness. Findings from the pilot study will inform the potential for broader adoption of AI-driven assessment tools in mathematics education, ensuring alignment with pedagogical best practices and student learning outcomes.

Presentation time 15 minutos and 5 minutes for Q&A

11:40AM **Presented by** **Tihany Rocabado**

Title: **Artificial Intelligence and Education: An Analysis of its Ethical Use to Improve Academic Performance (Paper # 976)**

Autored by Stacy Michelle Nuñez Lemoz, Tihany Gail Rocabado Severich, Agatha Clarice da Silva-Ovando, Mario Chong

Abstract *Artificial Intelligence (AI) tools are increasingly present across various fields, including education. While AI offers potential benefits, such as flexibility and personalized learning, its limitations and ethical concerns remain under examination. This study conducts a cross-sectional analysis of AI perceptions among students and teachers at a Bolivian university. Findings reveal that students frequently use AI in their coursework, yet they encounter practical limitations, and the impact on academic performance remains modest. Additionally, teachers express concerns over responsible use, highlighting challenges in maintaining ethical standards in educational settings. This study underscores the need for balanced integration of AI tools in education, addressing potential enhancements to student engagement and the ethical considerations crucial for sustainable application.*

Presentation time 15 minutos and 5 minutes for Q&A

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Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

11:00AM - 12:30PM

ONLINE English Technical Session #24

Chair: Melany M. Ciampi

Argentina 11:00AM	Australia 27 Mar, 12:00AM	Bolivia 10:00AM	Brazil 11:00AM	Canada 07:00AM
Chile 11:00AM	China 10:00PM	Colombia 09:00AM	Costa_Rica 08:00AM	Ecuador 09:00AM
Germany 03:00PM	Greece 04:00PM	Guatemala 08:00AM	Indonesia 09:00PM	Ireland 02:00PM
Israel 04:00PM	Mexico 08:00AM	Peru 09:00AM	Philippines 10:00PM	Portugal 02:00PM
Senegal 02:00PM	Spain 03:00PM	Singapore 10:00PM	Sweden 03:00PM	Trinidad_Tobago 10:00AM
Tunisia 03:00PM	United_Kingdom 02:00PM	USA-CDT 10:00AM	USA-PDT 07:00AM	USA-EDT 10:00AM
USA-MDT 08:00AM	USA-HST 04:00AM			

Local Time	Presentation	Speaker Time

11:00AM **Presented by** **Zain Kazmi** **Canada 07:00AM**

Title: **Work in Progress: Analysis of Industry-Education Relational Datasets (Paper # 934)**

Autored by Zain Kazmi, Natalie Kiesler, John Impagliazzo, Harsh Jhunjhunwala

Abstract *This work-in-progress paper explores industry datasets and how educators could utilize them in computing and engineering education. The effort offers helpful insights for educators, employers, policymakers, and constituents involved in workforce development. The industry-education dynamics through data-driven approaches enable professionals to enact ways to promote collaboration between industry needs and educa- tional outcomes for a more robust and competitive workforce. The authors investigate the analysis of industry datasets to explore the dynamics, challenges, and opportunities in relationship with education. By examining relevant data, including employment trends, skills and competency requirements, educational outcomes, and industry demands, this study and the associated DEAPening Employer Academic Partnerships (DEAP) project seek to provide insights into ways education systems can better align with the needs of industries to foster a more skilled and adaptable workforce. This effort features the significance of industry-education relationships and highlights important datasets gathered within the DEAP project.*

Presentation time 15 minutos and 5 minutes for Q&A

11:20AM **Presented by** **Erick Gauthier GBETIE** **Senegal 02:20PM**

Title: **Proposal for a Teaching Solution for Mobile Telecommunications 4G/5G and Associated Services in Virtual and Digital Universities (Paper # 1010)**

Autored by Erick Gauthier GBETIE, Mamadou BA, Siré Eugène ZABOLO, Ibrahima NGOM, Samuel OUYA

Abstract *The transition to 5G, the development of virtualization and cloud solutions, and microservices approaches via containerization offer new opportunities for telecommunications education, particularly in regions like Senegal. This article proposes a microservices-based approach to implement VoLTE and VoNR services at the Central School of Free Software and*

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Telecommunications in Dakar. A testbed with a containerized 4G/5G core network, srsRAN base stations and a Grafana monitoring system allows practical testing of voice services comparable to commercial networks. Resource challenges have been overcome thanks to open source technologies, offering a sustainable and adaptable educational model to African contexts for teaching modern telecommunications technologies even in remote training. This study contributes to the improvement of telecommunications education in Senegal and serves as a roadmap for the adoption of 5G technologies by other African institutions. Future work will integrate IoT and critical communications into the educational framework.

Presentation time 15 minutos and 5 minutes for Q&A

11:40AM **Presented by** **David Mothersill** **Ireland 02:40PM**

Title: **Work in Progress: Participatory research on parental attitudes towards STEM in Ireland (Paper # 1020)**

Autored by David Mothersill, Anu Sahni, Nikki Ryan, April Hargreaves, Fabián Armendáriz, Brigina O'Riordan, Josephine Bleach, Paul Stynes

Abstract *Early learning in science, technology, engineering, and mathematics is a predictor of future academic and career success in these subjects. However, while parents play a critical role in motivating children to learn these subjects and building self-efficacy, many parents in disadvantaged communities have low levels of knowledge and self-efficacy themselves. Programmes targeting these competencies are effective, but more evidence-based knowledge is needed to better understand how parents think and feel about these subjects during a time of rapid change due to advances in artificial intelligence. This Work in Progress paper presents ongoing participatory research on parental attitudes and awareness of science, technology, engineering, and mathematics, using a survey distributed to 157 parents (of 200), and semi-structured interviews with three parents (of 13). Initial results suggest parents are intimidated by these subjects but recognise their importance. This research will help us design new programmes to improve access to learning STEM subjects.*

Presentation time 15 minutos and 5 minutes for Q&A

12:00PM **Presented by** **Shahin Vassigh** **USA-EDT 11:00AM**

Title: **Work in Progress: VR-based Robotics Training for AEC Industry (Paper # 964)**

Autored by Biayna Bogosian, Shahin Vassigh, Bhavleen Kaur Narula, Seth Corrigan, Giancarlo Perez, Mohammadreza Akbari Lor, Bhanu Vodinepally, Tisa Islam Erana, Mark Alan Finlayson, Shu-Ching Chen

Abstract *This paper introduces the Intelligent Learning Platform for Robotics Operations (IL-PRO), a Virtual Reality (VR) system designed to enhance robotics training in the Architecture, Engineering, and Construction (AEC) industry. IL-PRO addresses the growing need for effective training methods as the AEC sector adopts robotic automation. The system integrates VR technology with game-assisted learning, combining online multimedia lessons for theory with immersive VR tasks for practical skills. Developed iteratively using Design-Based Research principles, IL-PRO incorporates realistic robot simulations and progressive task complexity. The VR*

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environment, built in Unity, aims to enhance engagement, motor coordination, and spatial awareness in robotics training. While future goals include AI-driven personalized instruction, this work-in-progress focuses on VR curriculum development and implementation. The paper concludes by discussing future directions, including curriculum expansion and cross-institutional adoption, to establish new benchmarks in innovative robotics education for the AEC industry.

Presentation time 15 minutos and 5 minutes for Q&A

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WEDNESDAY, March 26, 2025

11:00AM - 12:30PM

ONLINE English Technical Session #25

Chair: Luis Amaral

Argentina 11:00AM	Australia 27 Mar, 12:00AM	Bolivia 10:00AM	Brazil 11:00AM	Canada 07:00AM
Chile 11:00AM	China 10:00PM	Colombia 09:00AM	Costa_Rica 08:00AM	Ecuador 09:00AM
Germany 03:00PM	Greece 04:00PM	Guatemala 08:00AM	Indonesia 09:00PM	Ireland 02:00PM
Israel 04:00PM	Mexico 08:00AM	Peru 09:00AM	Philippines 10:00PM	Portugal 02:00PM
Senegal 02:00PM	Spain 03:00PM	Singapore 10:00PM	Sweden 03:00PM	Trinidad_Tobago 10:00AM
Tunisia 03:00PM	United_Kingdom 02:00PM	USA-CDT 10:00AM	USA-PDT 07:00AM	USA-EDT 10:00AM
USA-MDT 08:00AM	USA-HST 04:00AM			

Local Time	Presentation	Speaker Time

11:00AM **Presented by** **Rita Cristina Galarraga Berardi** **Brazil 11:00AM**

Title: **A Multidisciplinary Approach for Primary Education Teachers: Integrating Robotics, Cryptography and History (Paper # 938)**

Autored by Nicole D. Hildebrand, Maria Eduarda B. Bandeira, Mayara D.V. HogeR, Patricia A. Turato, Bruno C. Julian, Caio A.P. Fodra, Rita C.G. Berardi, João A. Fabro, Nádia P. Kozievitch

Abstract *With the growing demand for the development of computational thinking skills, the approach of robotics has been widely adopted in schools. However, there is a lack of adequate and in-depth discussion on how robotics should be implemented in the classroom to effectively foster the development of computational thinking in K-8 education, presenting technical concepts in a reflective manner that connects to the everyday lives of the school community. This paper presents a multidisciplinary approach that integrates robotics and cryptography within a historical context of a city. The methodology was applied to primary education teachers, allowing them to identify relevant concepts within these themes, integrating technologies with local history.*

Presentation time 15 minutos and 5 minutes for Q&A

11:20AM **Presented by** **Maria Francisca Costa** **Portugal 02:20PM**

Title: **Work in Progress: Approach to Inclusive Society in Current Fashion Education: Main Challenges and AI-Driven Tools (Paper # 956)**

Autored by Maria Francisca Costa, do Amaral Inês

Abstract *This study investigates the challenges of inclusive fashion education and explores how artificial intelligence (AI) can be integrated to promote inclusion, which goes beyond physical issues, also involving gender, ethnicity, and body types. The limitations of current curricula are identified, and examples of practices in institutions that integrate inclusion and artificial intelligence into fashion education are highlighted. Successful examples include courses focused on creating fashion for non-normative body types and using AI to personalize designs and change stereotypes. This study proposes that AI, when integrated into teaching, can be a transformative tool to empower future professionals to create more inclusive*

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Education in the Age of Generative AI: Embracing Digital Transformation

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fashion.

Presentation time 15 minutos and 5 minutes for Q&A

11:40AM **Presented by** **Inês Castro** **Portugal** **02:40PM**

Title: **Work in Progress: AI and Fashion Trends - An Exploration To The Topic (Paper # 957)**

Autored by Inês Castro, Inês do Amaral

Abstract *This research-in-progress paper delves into the rationale behind luxury brands using AI to improve trendforecasting and scenario modeling in the fashion industry. It includes a review of 23 articles published between 2012 and 2024 on IEEE Xplore, as well as an analysis of public discourse initiated by luxury brands on AI's role in fashion. As part of a larger project, this paper aims, primarily, to present the key points of emerging debate.*

Presentation time 15 minutos and 5 minutes for Q&A

12:00PM **Presented by** **João Teixeira** **Portugal** **03:00PM**

Title: **Work in Progress: AI Digital Transformation: AI Tools for Fashion Design (Paper # 960)**

Autored by João Teixeira, Joana Cunha, Inês do Amaral

Abstract *In today's society, there is a recognition of how artificial intelligence is rapidly influencing the fashion industry. The fashion industry is undergoing a digital transformation, where generative artificial intelligence tools can be used to improve the multiple phases of the fashion design process. However, this trend calls for a change in the pedagogical practice of fashion design, adequately training future fashion designers. This article aims to present a summary of AI generative tools that help the fashion design process, highlighting the permanent need to adapt teaching practices in fashion design to train future designers for the urgent needs of the industry.*

Presentation time 15 minutos and 5 minutes for Q&A

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Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

11:00AM - 12:30PM

HYBRID Spanish Technical Session #26

Chair: José-Luis Sierra-Rodríguez

Argentina 11:00AM	Australia 27 Mar, 12:00AM	Bolivia 10:00AM	Brazil 11:00AM	Canada 07:00AM
Chile 11:00AM	China 10:00PM	Colombia 09:00AM	Costa_Rica 08:00AM	Ecuador 09:00AM
Germany 03:00PM	Greece 04:00PM	Guatemala 08:00AM	Indonesia 09:00PM	Ireland 02:00PM
Israel 04:00PM	Mexico 08:00AM	Peru 09:00AM	Philippines 10:00PM	Portugal 02:00PM
Senegal 02:00PM	Spain 03:00PM	Singapore 10:00PM	Sweden 03:00PM	Trinidad_Tobago 10:00AM
Tunisia 03:00PM	United_Kingdom 02:00PM	USA-CDT 10:00AM	USA-PDT 07:00AM	USA-EDT 10:00AM
USA-MDT 08:00AM	USA-HST 04:00AM			

Local Time	Presentation

11:00AM **Presented by** **Leonardo Saavedra Munar**

Title: **Opportunities for Integrating Generative AI, Service-Learning and Maker Movement for Transformative Learning in Engineering Education. (Paper # 945)**

Autored by Leonardo Saavedra Munar, Dulfay Astrid González Jiménez, Jesús Alfonso López Sotelo, Juan Vicente Pradilla Cerón

Abstract *This article explores the possibilities of integrating Generative AI, the maker movement, and service learning in engineering education to promote transformative learning. Empirical data from first-year engineering students identified three key outcomes: increased ability to solve complex problems through creative and collaborative approaches; enhanced social skills such as teamwork and community engagement; and greater personalization and effectiveness of learning via generative tools. Lessons learned emphasize the importance of flexible curriculum planning for smooth integration of these methodologies and the necessity of teacher training to manage interdisciplinary projects. The study highlights the need for a holistic approach that links learning outcomes to the social and technological context. Ultimately, this integrative methodology offers opportunities to innovate engineering education by creating more active and meaningful educational experiences, preparing future engineers for the challenges of today's world by fostering the technical, critical, and social competencies essential to their professional education.*

Presentation time 15 minutos and 5 minutes for Q&A

11:20AM **Presented by** **Dulce Isaura Vallejo Rendón**

Title: **Assessing the Impact of Virtual Reality on Molecular Geometry Learning for Engineering Students (Paper # 952)**

Autored by Dulce Isaura Vallejo Rendon, Roberto Gomez Tobias, Jorge Alvarez, Juan Rafael Garcia Flores

Abstract *This study investigates the effectiveness of Virtual Reality (VR) as a teaching tool for molecular geometry in engineering education, comparing it with traditional methods and physical 3D models. Sixty engineering students were randomly assigned to three groups, each receiving instruction through one of the methods. Pre- and post-intervention assessments were conducted using a custom rubric evaluated by two professors. Statistical analyses, including paired t-tests, ANOVA, and Tukey´s HSD post-hoc tests, were performed to assess the significance of improvements in*

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comprehension and engagement. The results showed that VR significantly enhanced students understanding of molecular geometry, with a mean improvement of 11.15 points over traditional methods ($p < 0.001$) and 6.35 points over physical models ($p < 0.001$). The findings support the integration of VR into chemistry curricula, offering a more engaging and effective learning experience for students.

Presentation time 15 minutos and 5 minutes for Q&A

11:40AM **Presented by** **José-Luis Sierra-Rodríguez**

Title: **Work in Progress: ESPECIFICA++, a DSL for Developing the Competency of Formal Specification in Computer Programming Education (Paper # 961)**

Autored by José-Luis Sierra-Rodríguez, Mercedes Gómez-Albarrán, Ana-María González-de-Miguel, Marta López-Fernández, Antonio Sarasa-Cabezuelo

Abstract *Competence in Formal specification is a key skill with which Computing Engineering students often face significant challenges. In this paper, we propose ESPECIFICA++, a domain-specific language (DSL) embedded in the programming language C++ that allows for the description of executable specifications, resulting in a promising tool for fostering the development of formal specification skills among students. Using ESPECIFICA++, students can describe aspects such as preconditions, postconditions, and algorithm invariants. These descriptions then become executable objects that can be validated against sets of test cases, as if they were programs. The paper describes the development process and the current stage in the development of the DSL, outlines the main features of ESPECIFICA++, and conducts a preliminary evaluation of its applicability and usefulness.*

Presentation time 15 minutos and 5 minutes for Q&A

12:30PM - 2:30PM

HYBRID Lunch Time

Chair: Alejandro Adorjan Olivera

Argentina 12:30PM	Australia 27 Mar, 01:30AM	Bolivia 11:30AM	Brazil 12:30PM	Canada 08:30AM
Chile 12:30PM	China 11:30PM	Colombia 10:30AM	Costa_Rica 09:30AM	Ecuador 10:30AM
Germany 04:30PM	Greece 05:30PM	Guatemala 09:30AM	Indonesia 10:30PM	Ireland 03:30PM
Israel 05:30PM	Mexico 09:30AM	Peru 10:30AM	Philippines 11:30PM	Portugal 03:30PM
Senegal 03:30PM	Spain 04:30PM	Singapore 11:30PM	Sweden 04:30PM	Trinidad_Tobago 11:30AM
Tunisia 04:30PM	United_Kingdom 03:30PM	USA-CDT 11:30AM	USA-PDT 08:30AM	USA-EDT 11:30AM
USA-MDT 09:30AM	USA-HST 05:30AM			

Duration: 120 minutes

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Education in the Age of Generative AI: Embracing Digital Transformation

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12:30PM - 1:00PM

HYBRID Pedagocial Tour

Chair: Alejandro Adorjan Olivera

Argentina 12:30PM	Australia 27 Mar, 01:30AM	Bolivia 11:30AM	Brazil 12:30PM	Canada 08:30AM
Chile 12:30PM	China 11:30PM	Colombia 10:30AM	Costa_Rica 09:30AM	Ecuador 10:30AM
Germany 04:30PM	Greece 05:30PM	Guatemala 09:30AM	Indonesia 10:30PM	Ireland 03:30PM
Israel 05:30PM	Mexico 09:30AM	Peru 10:30AM	Philippines 11:30PM	Portugal 03:30PM
Senegal 03:30PM	Spain 04:30PM	Singapore 11:30PM	Sweden 04:30PM	Trinidad_Tobago 11:30AM
Tunisia 04:30PM	United_Kingdom 03:30PM	USA-CDT 11:30AM	USA-PDT 08:30AM	USA-EDT 11:30AM
USA-MDT 09:30AM	USA-HST 05:30AM			

A visit to the Pedagogical Museum, located one block from ORT. This unique place, founded in 1889, holds great historical and architectural significance, especially in relation to education and its evolution. The tour will include a guided visit.

. *Meeting Point: Cagancha 1175 (Plaza de Cagancha)*

. *Maps: https://maps.app.goo.gl/4A3pCKZMPM7k9gFr5*

. *Start Time: 12:30*

. *End Time: 13:00*

Duration:30 Minutes

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Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

2:30PM - 4:00PM

HYBRID Spanish Plenary #7

Chair: Claudio R. Brito

Plenary: Assessing AI's Role in an Integral Calculus Course: Usage Patterns, Perceptions, and Learning Outcomes (Paper # 1067)

Argentina 02:30PM	Australia 27 Mar, 03:30AM	Bolivia 01:30PM	Brazil 02:30PM	Canada 10:30AM
Chile 02:30PM	China 27 Mar, 01:30AM	Colombia 12:30PM	Costa_Rica 11:30AM	Ecuador 12:30PM
Germany 06:30PM	Greece 07:30PM	Guatemala 11:30AM	Indonesia 27 Mar, 12:30AM	Ireland 05:30PM
Israel 07:30PM	Mexico 11:30AM	Peru 12:30PM	Philippines 27 Mar, 01:30AM	Portugal 05:30PM
Senegal 05:30PM	Spain 06:30PM	Singapore 27 Mar, 01:30AM	Sweden 06:30PM	Trinidad_Tobago 01:30PM
Tunisia 06:30PM	United_Kingdom 05:30PM	USA-CDT 01:30PM	USA-PDT 10:30AM	USA-EDT 01:30PM
USA-MDT 11:30AM	USA-HST 07:30AM			

Artificial intelligence (AI) is changing mathematics education by offering personalized learning, adaptive real-time feedback, and enhanced problem-solving strategies. Its integration into academic settings presents opportunities and challenges, as students benefit from improved efficiency but also face overreliance and diminished critical thinking risks. This study examines AI usage among engineering students, analyzing their motivations, perceptions, and concerns regarding its role in learning mathematics. While AI facilitates understanding and accelerates problem-solving, ethical issues and potential dependency raise questions about its long-term use. The findings underscore the importance of pedagogical strategies that incorporate AI responsibly, ensuring that it serves as a tool to support, rather than replace, mathematical reasoning and conceptual understanding.

Authored by
Roberto Portillo, Alberth Alvarado

Presented by

Roberto Portillo

ROBERTO PORTILLO heads the Academic Support Department of Universidad Galileo in Guatemala and is a mathematics instructor in engineering courses. He holds a B.S. in Electronics and Computer Science (from Galileo University, Guatemala) and an M.S. in Operations Research (from Galileo University, Guatemala). He also has a vast teaching experience in mathematics for engineering, which has led him to obtain multiple excellence teaching awards. His research area is engineering education, where he has worked on numerous research projects to improve students' academic performance and motivation. Additionally, he collaborates with the SENACYT (Secretaría Nacional de Ciencia y Tecnología de Guatemala) as National Contact Point (NCP) in the CELAC (Comunidad de Estados Latinoamericanos) group to promote research infrastructures collaborations between countries in Latin American and the European Union (EU).

Alberth Alvarado

ALBERTH ALVARADO received (with honors) the B.S. degree in Electronics and Computer Science Engineering from Universidad Francisco Marroquín, Guatemala, Guatemala; the M.S. degree in Applied Mathematics and a Ph.D. in Industrial Engineering from the University of Illinois at Urbana- Champaign, United States of America, in 2010 and 2014, respectively. Dr. Alvarado is the head of the Department of Applied Mathematics at Universidad Galileo, Guatemala, Guatemala. Dr. Alvarado has a broad teaching experience in mathematics. He teaches undergraduate mathematics courses for engineering students and graduate-level operations research and data science courses. Dr. Alvarado's research is concentrated in two areas. First, he is interested in

game theory, convex and nonconvex programming, distributed optimization, and their application to signal processing and communication problems. Finally, Dr. Alvarado is also working in engineering education and has specialized interests in mathematics teaching and curriculum development.

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Session duration: 90 minutes. Join us on time!

4:00PM - 4:30PM

HYBRID Coffee Break

Argentina 04:00PM	Australia 27 Mar, 05:00AM	Bolivia 03:00PM	Brazil 04:00PM	Canada 12:00PM
Chile 04:00PM	China 27 Mar, 03:00AM	Colombia 02:00PM	Costa_Rica 01:00PM	Ecuador 02:00PM
Germany 08:00PM	Greece 09:00PM	Guatemala 01:00PM	Indonesia 27 Mar, 02:00AM	Ireland 07:00PM
Israel 09:00PM	Mexico 01:00PM	Peru 02:00PM	Philippines 27 Mar, 03:00AM	Portugal 07:00PM
Senegal 07:00PM	Spain 08:00PM	Singapore 27 Mar, 03:00AM	Sweden 08:00PM	Trinidad_Tobago 03:00PM
Tunisia 08:00PM	United_Kingdom 07:00PM	USA-CDT 03:00PM	USA-PDT 12:00PM	USA-EDT 03:00PM
USA-MDT 01:00PM	USA-HST 09:00AM			

Duration: 30 minutes. Join us on time!

4:30PM - 5:00PM

HYBRID Awards Session

Chair: Osvaldo Clua

Argentina 04:30PM	Australia 27 Mar, 05:30AM	Bolivia 03:30PM	Brazil 04:30PM	Canada 12:30PM
Chile 04:30PM	China 27 Mar, 03:30AM	Colombia 02:30PM	Costa_Rica 01:30PM	Ecuador 02:30PM
Germany 08:30PM	Greece 09:30PM	Guatemala 01:30PM	Indonesia 27 Mar, 02:30AM	Ireland 07:30PM
Israel 09:30PM	Mexico 01:30PM	Peru 02:30PM	Philippines 27 Mar, 03:30AM	Portugal 07:30PM
Senegal 07:30PM	Spain 08:30PM	Singapore 27 Mar, 03:30AM	Sweden 08:30PM	Trinidad_Tobago 03:30PM
Tunisia 08:30PM	United_Kingdom 07:30PM	USA-CDT 03:30PM	USA-PDT 12:30PM	USA-EDT 03:30PM
USA-MDT 01:30PM	USA-HST 09:30AM			

This is a moment to recognize the valuable contributions of colleagues and institutions that have advanced education in engineering, technology, and computer science, as well as to honor the best papers of the conference

Session duration: 30 minutes. Join us on time!

5:00PM - 5:30PM

HYBRID EDUNINE 2026 Announcement!

Chair: Claudio R. Brito

Argentina 05:00PM	Australia 27 Mar, 06:00AM	Bolivia 04:00PM	Brazil 05:00PM	Canada 01:00PM
Chile 05:00PM	China 27 Mar, 04:00AM	Colombia 03:00PM	Costa_Rica 02:00PM	Ecuador 03:00PM
Germany 09:00PM	Greece 10:00PM	Guatemala 02:00PM	Indonesia 27 Mar, 03:00AM	Ireland 08:00PM
Israel 10:00PM	Mexico 02:00PM	Peru 03:00PM	Philippines 27 Mar, 04:00AM	Portugal 08:00PM
Senegal 08:00PM	Spain 09:00PM	Singapore 27 Mar, 04:00AM	Sweden 09:00PM	Trinidad_Tobago 04:00PM
Tunisia 09:00PM	United_Kingdom 08:00PM	USA-CDT 04:00PM	USA-PDT 01:00PM	USA-EDT 04:00PM
USA-MDT 02:00PM	USA-HST 10:00AM			

Announcement of the EDUNINE2026 Conference in the vibrant city of Mexico, hosted by the Monterrey Institute of Technology and Higher Education, March 8-11, 2026.

Session duration: 30 minutes. Join us on time!

CONFERENCE PROGRAM

Education in the Age of Generative AI: Embracing Digital Transformation

WEDNESDAY, March 26, 2025

5:30PM - 6:00PM

HYBRID Closing Section

Chair: Alejandro Adorjan Olivera

Argentina 05:30PM	Australia 27 Mar, 06:30AM	Bolivia 04:30PM	Brazil 05:30PM	Canada 01:30PM
Chile 05:30PM	China 27 Mar, 04:30AM	Colombia 03:30PM	Costa_Rica 02:30PM	Ecuador 03:30PM
Germany 09:30PM	Greece 10:30PM	Guatemala 02:30PM	Indonesia 27 Mar, 03:30AM	Ireland 08:30PM
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USA-MDT 02:30PM	USA-HST 10:30AM			

Final Remarks and Conclusion of the Conference

Session duration: 30 minutes. Join us on time!