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**SPECIAL ISSUE ON**

**Artificial Intelligence in Engineering Education**

**Guest Editors**

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Artificial intelligence (AI) is transforming the way engineering systems are conceived, designed and managed, helping to maximize the chances of successfully achieving their goals. Engineering science, technology and research clearly benefit from AI and engineering educators should be able to make students aware of its potentials, teach them the necessary fundamentals of this field of study and guide them through the application of these algorithms and technologies to the development of real engineering projects, as necessary aspects in modern engineering programs of study. However, the more relevant impact of artificial intelligence in engineering education goes beyond the application of a set of novel resources to solving specific engineering problems: In fact, the concept of ''artificial intelligence-aided engineering education'' refers to utilizing artificial intelligence techniques and resources for improving the teaching-learning process in higher education, especially in connection with scientific-technological studies.

In our study about artificial intelligence-aided engineering education (Martín Núñez & Díaz Lantada, Int. J. Eng. Educ. 2020) an implementation roadmap towards "intelligent universities" was discussed, involving the incorporation of AI for supporting educational practice, including curricular planning and course organization and assessment, for enhancing the results of teaching-learning experiences, for simplifying the bureaucratic burden and for helping educators and students optimize their efforts aimed at improving outcomes. Different trends and challenges were discussed then and pioneering educational activities involving AI or benefiting from it were analyzed.

More recently, the emergence of generative artificial intelligence has started to importantly affect the *statu quo* of engineering practice and brings new possibilities and unknowns to engineering educational practice. In many ways these generative AI models facilitate the usability of AI and empower its widespread application, because the instructions are provided straightforwardly, in a highly user-friendly environment for beginners. Unexperienced users without almost any training in programming can reach very impressive results, regarding content creation, in just a few hours. Highly interesting impacts are already visible in the fields of engineering, design and art, and these advances are expected to radically affect the professional practice of engineers in the

following years. This should be taken into account in actions aimed at the continuous reformulation of engineering education in a changing world.

Accordingly, to methodically study the potentials, to maximize the expected benefits and to mitigate any possible drawbacks of AI in engineering education, we propose the present IJEE special issue on Artificial Intelligence in Engineering Education.

**Topics of interest include**

- Educational experiences in engineering education involving AI and generative AI.
- Project-based learning experiences empowered by AI and generative AI.
- Service-learning experiences empowered by AI and generative AI.
- Artificial intelligence(s) as students' mentors and as teaching assistants.
- Innovative AI-based assessment approaches.
- AI as a data analysis tool for educational innovation.
- AI methods for increased efficiency and sustainability in universities.
- AI and generative AI in connection with "Engineering Education 5.0".
- Studies dealing with the ethical, social and legal issues of AI in engineering education.

Potential authors are kindly asked to send their questions and submissions to the emails of the guest editors of the special issue.

Submissions are to be sent by e-mail in MSWord (.docx) to the guest-editors.

**Important dates**

- Submission of full manuscripts according to the
  IJEE Guide for Authors                          March 31st, 2025.
- Reviewers feedback:                              April 30th, 2025.
- Submission of revised Manuscripts      May 31st, 2025.
- Final decision                                        June 30th, 2025.

Manuscripts must be written in English and limited to 12 one-sided, one-column, single-spaced pages. Manuscripts should include keywords, complete affiliation addresses of the authors, including their emails, and short biographies. Citations and reference listing should comply with IJEE Guide for Authors. Figures and illustrations should be suitable for non-color printing. No copyrighted material should be included.

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