CALL FOR PAPERS
Special Issue on Machine Learning and Representation Issues in CAD/CAM

[ASME's Guide for Journal Authors](#)

Submit Manuscript →

Machine Learning (ML) as a subfield of Artificial Intelligence (AI) is transforming many critical aspects of human life. Its application to engineering systems is poised to generate solutions to problems that remain unsolved. However, the ML has also been shown to posit new questions that were not raised before. While the utility of ML cannot be overstated, there are unique challenges in using existing ML algorithms, techniques, and tools in Computer-Aided Design and Manufacturing (CAD/CAM). These relate to representation issues, an adaptation of ML techniques, and discovery of new ML techniques that would support development of CAD/CAM systems to facilitate the generation and evaluation of a broad class of design and manufacturing solutions.

This Special Issue strives to ask and answer questions pertaining to effective representation of engineering models for machine learning, neural networks and deep generative models in CAD/CAM, mathematical frameworks that combine ML with CAD/CAM in geometry and topology, data interpretation and physics-based learning. Some of the topics in this Special Issue are as follows, but this is not an exhaustive list. Please feel free to contact the Guest Editors to ensure that your submission is appropriate for this Special Issue.

Topic Areas

- Effective representations of geometric and topological models for ML
- Mathematical frameworks that bring together ML with CAD/CAM
- ML algorithms for conceptual design of engineering systems
- ML-driven automated generation and evaluation of conceptual designs
- Intelligent and predictive design
- Date creation and generation for ML in CAD/CAM
- Deep generative modeling in CAD/CAM
- Role of latent space in design exploration in deep generative frameworks

Publication Target Dates
Paper submission deadline   **January 15, 2023**
Review completed   **June 15, 2023**
Special Issue publication date   **December 2023**

Submission Instructions
Papers should be submitted electronically to the journal at **[journaltool.asme.org](#)**. If you already have an account, log in as an author to your ASME account. If you do not have an account, sign up for an account. In either case, at the **Paper Submittal** page, select the **ASME *Journal of Computing and Information Science in Engineering*** and then select the Special Issue **Machine Learning and Representation Issues in CAD/CAM.**

Papers received after the deadline or papers not selected for inclusion in the Special Issue may be accepted for publication in a regular issue. Early submission is highly encouraged. Please also email the Editor, Professor Yan Wang, at **[yan-wang@gatech.edu](#)**, to alert him that your paper is intended for the Special Issue.

Guest Editors
Prof. Anurag Purwar, Stony Brook University, USA, **[anurag.purwar@stonybrook.edu](#)**
Prof. Kaushal Desai, Indian Institute of Technology Jodhpur, India, **[kadesai@iitj.ac.in](#)**
Prof. Rahul Rai, Clemson University, USA, **[rrai@clemson.edu](#)**
Prof. Steve Canfield, Tennessee Technological University, USA, **[scanfield@tntech.edu](#)**
Prof. Zhenguo Nie, Tsinghua University, China, **[zhenguonie@tsinghua.edu.cn](#)**