MACHINE LEARNING AND IGA

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Machine learning has gained increasing attention in the field of computational science and engineering, due to its superior performance in nonlinear data regression, universal approximation, feature extraction, etc. Embedding physics into machine learning has enabled diverse applications in both forward and inverse problems, including solving high-dimensional problems governed by partial differential equations (PDEs), discovering hidden physics, and uncertainty quantification. This symposium provides a platform for researchers to discuss the synergies between machine learning and isogeometric analysis (IGA) for general applications in computational mechanics. Examples of topics include, but not limited to:

- IGA based physics-informed neural networks for solving PDEs,
- Coupling IGA with deep learning neural networks for accelerated multiscale simulations,
- Machine learning or data-enabled reduced order modeling for accelerated IGA,
- Machine learning based isogeometric topology optimization,
- Machine learning enhanced IGA for inverse problems,
- Machine learning methods for IGA uncertainty quantification and propagation, or anything related to innovative machine learning approaches that have potential to enhance or combine with IGA