Machine Learning and Informatics for Materials Discovery and Design

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Abstract

The goal of this symposium is to discuss recent advances in machine learning approaches applied to materials and mechanics. Materials of interest include, but are not limited to: cementitious materials, glasses, asphalt, metals, ceramics, hierarchically-designed materials, composite materials, gels, biomaterials, granular materials, etc. Examples of topics of interest include, but are not limited to:
- Machine learning approaches to accelerate the discovery of novel materials.
- Data-driven composition–structure–property models in materials.
- Machine-learning-based geometry optimization and hierarchical design to enhance materials performance.
- Machine learning to predict far-from-equilibrium behavior.
- Informatics approaches for microstructure characterization.
- Combination of machine learning and first-principle simulations.
- Machine learning applied to material imaging/pattern recognition.

Keywords: machine learning, informatics, big data, materials

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