Special Issue

Machine Learning for the Development of 3D Printing Process/Materials

Message from the Guest Editors

In recent years, the convergence of machine learning (ML) and 3D printing has revolutionized the manufacturing landscape. 3D printing is a transformative technology that enables the creation of intricate and complex objects layer by layer. The predictive capability of ML algorithms enables manufacturers to optimize material selection, ensuring the desired properties of the printed objects. ML models can simulate the interactions between materials and printing conditions, leading to the development of innovative materials with enhanced strength, flexibility, and heat resistance. ML algorithms can process data from sensors embedded within the printing process, identifying patterns and correlations that are beyond human perception. By analyzing these data, ML models can optimize the printing process in real-time, reducing defects, minimizing material wastage, and enhancing the overall efficiency of production. This Special Issue is aimed at providing selected contributions on advances in the application of ML in 3D printing.

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