Special Issue

Geometry in Machine Learning

Message from the Guest Editors

Recent years have seen a surge of interest in developing geometric techniques for analyzing machine learning algorithms. Much of this work is motivated by the need to understand the performance of deep learning-based algorithms that have revolutionized modern machine learning over the past decade. Methods from geometry have been successfully used to gain insight into three crucial aspects of modern machine learning: generalization, robustness, and optimization. In this Special Issue, we welcome submissions related to the geometry of deep learning, applications of optimal transport, information geometry, and high-dimensional geometry for the theoretical analysis of machine learning algorithms. This is a highly interdisciplinary research topic, and we invite contributions from the mathematics, computer science, and engineering communities. Through this issue, we hope to highlight and strengthen the deep connections between geometry and machine learning.

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Deadline for manuscript submissions

closed (30 September 2020)

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