



Special Issue Reprint

## **Information Theory and Machine Learning**

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ISBN 978-3-0365-5307-8 (Hardback) ISBN 978-3-0365-5308-5 (PDF)

The recent successes of machine learning, especially regarding systems based on deep neural networks, have encouraged further research activities and raised a new set of challenges in understanding and designing complex machine learning algorithms. New applications require learning algorithms to be distributed, have transferable learning results, use computation resources efficiently, convergence quickly on online settings, have performance guarantees, satisfy fairness or privacy constraints, incorporate domain knowledge on model structures, etc. A new wave of developments in statistical learning theory and information theory has set out to address these challenges. This Special Issue, "Machine Learning and Information Theory", aims to collect recent results in this direction reflecting a diverse spectrum of visions and efforts to extend conventional theories and develop analysis tools for these complex machine learning systems.



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