

Special Issue

Data Compression and Its Application in AI

Message from the Guest Editors

Research in the past decade has shown that data compression and AI are deeply related to each other. For example, predicting pixel values is one of the most important tasks that can be improved using deep learning for image recognition. In contrast, deep learning for image recognition can be accelerated by using compressed images as the training data. Such are applications of lossy compression to AI. Moreover, we can also find a close relation between lossless compression and AI, e.g., in language processing. As part of machine translation, pairs of sentences in the target and source languages are given as the training data. In fact, it is known that the translation accuracy can be improved by directly learning from the compressed training data. In this way, data compression and AI are developing while interacting with each other. Addressing this Special Issue, we invite a wide range of theoretical/empirical research on both AI for data compression and compression for AI.

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