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Theory and Application of the Information Bottleneck Method

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Message from the Guest Editors

Even though more than two decades have passed since Tishby et al. introduced an information theoretical setup termed the information bottleneck method, it still is an extremely interesting and hot research topic. A particularly fascinating aspect of this concept is its generality, which made the information bottleneck method a framework with many versatile applications over the last few years. Applications of the information bottleneck method now cover many different fields, for example, machine learning, deep learning, neuroscience, multimedia and image processing, data processing, source coding, channel coding and information processing. In addition, the theoretical backgrounds of the method, generalizations and algorithmic approaches became fruitful research topics.

This Special Issue will consolidate the latest ideas and findings on applications and theory of the information bottleneck method. Intentionally, we do not narrow the scope to a particular field, but encourage submissions from all engineering disciplines. We especially appreciate contributions on machine learning and signal processing in communications.



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Special Issue



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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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