Colloquium Series

Mathematical Models of Learning From an Inconsistent Source

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Abstract: Learning in natural environments is often characterized by a degree of inconsistency from an input. These inconsistencies occur e.g. when learning from more than one source, or when the presence of environmental noise distorts incoming information; as a result, the task faced by the learner becomes ambiguous. In this study we present a new interpretation of existing algorithms to model and investigate the process of a learner learning from an inconsistent source. Our model allows us to analyze and present a theoretical explanation of a frequency boosting property, whereby the learner surpasses the fluency of the source by increasing the frequency of the most common input. We then focus on an application of our model to describe the Object-Label-Order effect.

Keywords: mathematical modeling, complex social phenomena, learning

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