Reviewing the Current State of Machine Learning for Artificial Intelligence with Regards to the use of Contextual Information.

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ABSTRACT

This paper will consider the current state of Machine Learning for Artificial Intelligence, more specifically for applications, such as: Speech Recognition, Game Playing and Image Processing. The artificial world tends to make limited use of context in comparison to what currently happens in human life, while it would benefit from improvements in this area. Additionally, the process of transferring knowledge between application domains is another important area where artificial system can improve. Using context and transferability would have several potential benefits, such as: better ability to function in multiple problem domains, improved understanding of human interaction and stronger grasping of current and potential future situations. While these items are all quite usual to us humans, it is particularly challenging to integrate them into artificial systems, as will be shown within this review. The limitations of our current systems with regards to these topics and the achievable improvements, if these items would be addressed, will also be covered. It is expected that by utilising transferability and/or context, many algorithms in the artificial intelligence field will be able to expand their functionality considerably and should provide for more general purpose learning algorithms.