

# Predictive coding: Effective learning with local plasticity

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## Abstract

Synaptic plasticity underlying learning in biological neural networks only relies on information locally available to a synapse such as activity of presynaptic and postsynaptic neurons. This is a fundamental constraint on biological neural networks which shapes how they are organized. Hence it is important to understand how effective learning in large networks of neurons can be achieved within the constraint of local plasticity. This talk will review predictive coding, which is an influential model describing information processing in hierarchically organized cortical circuits. The talk will demonstrate that predictive coding network can learn equally or more effectively than artificial neural networks trained with backpropagation despite relying only on the local Hebbian plasticity.

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