INSALATE DI MATEMATICA

presents

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Deep Learning for Inverse Problems in Imaging

Abstract:

In the field of imaging, inverse problems arise while attempting to reconstruct an image from incomplete or indirect data. These problems are usually ill-posed: reconstructing a unique solution that fits the observations is challenging without some prior knowledge on the underlying data distribution. Traditional methods minimize a cost function derived by assuming some prior statistical knowledge of data. On the contrary, deep learning techniques try to extrapolate the solution of an inverse problem from existing large sets of data. In many applications, building such datasets is expensive and time-consuming. Very recent techniques combine the two approaches in order to have deep learning methods that do not need extensive datasets.

Keywords: inverse problems · imaging · deep learning

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"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)