



Decision forests for computer vision

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Abstract

In this lecture we will present a general model of decision forests and discuss how it can be used for a large variety of supervised and unsupervised tasks in machine learning and computer vision. Numerous toy examples will help explain and demonstrate how small variants of the basic forest model correspond to powerful algorithms for efficient classification, regression, density estimation, manifold learning and semi-supervised learning. We will also show how these techniques can be applied to real-world applications including human tracking in Microsoft Kinect.

Keywords: Decision forests, Random forests, Decision trees, Machine learning, Classification, Regression, Kinect.