Use of Fractal Geometry in Machine Learning

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Abstract : The main component of a machine learning system is the classifier. Classifiers are mathematical models that can perform classification tasks for a specific application area. Additionally, many classifiers are combined using any of the available methods to reduce the classifier error rate. The benefits gained from the combination of multiple classifier designs has motivated the development of diverse approaches to multiple classifiers. We aim to investigate using fractal geometry to develop an improved classifier combiner. Initially we experiment with measuring the fractal dimension of data and use the results in the development of a combiner strategy.

Keywords : fractal geometry, machine learning, classifier, fractal dimension

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