The Stochastics of Diagnostic Tests

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Abstract

Motivated by the need to develop a metric for comparing ROC curves that may cross, we first discuss the stochastic ordering (convex and star-shaped) properties of these curves and discuss their nature of their crossings. We then introduce an information theoretic measure, namely, the dinegentropy, as a comparison metric. The introduction of this metric, which is based on the Kullback-Liebler distance, in the context of diagnostic tests appears to be new.

Keywords: Stochastic ordering; Information theoretic measures; Distance measures.

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