Statistical Shape Analysis of Manufacturing Data

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Abstract

We show how Statistical Shape Analysis, a set of techniques used to model the shapes of biological and other kind of objects in the natural sciences, can be used also to model the geometric shape of a manufactured part. We review Procrustes-based methods, and emphasize possible solutions to the basic problem of having corresponding, or matching, labels in the measured "landmarks", the locations of the measured points on each part acquired with a CMM or similar instrument.

Keywords: Procrustes Methods, Point Matching, Correspondence Problem, Landmark Matching, Geometric Specifications, Profile data.