Designing fair curves and surfaces: shape quality in geometric modeling and computer-aided design

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Abstrak

This state-of-the-art study of the techniques used for designing curves and surfaces for computer-aided design applications focuses on the principle that fair shapes are always free of unessential features and are simple in design.
The authors define fairness mathematically, demonstrate how newly developed curve and surface schemes guarantee fairness, and assist the user in identifying and removing shape aberrations in a surface model without destroying the principal shape characteristics of the model.
Aesthetic aspects of geometric modeling are of vital importance in industrial design and modeling, particularly in the automobile and aerospace industries. Any engineer working in computer-aided design, computer-aided manufacturing, or computer-aided engineering will want to add this volume to his or her library. Researchers who have a familiarity with basic techniques in computer-aided graphic design and some knowledge of differential geometry will find this book a helpful reference. It is essential reading for statisticians working on approximation or smoothing of data with mathematical curves or surfaces.