عنوان مقاله:

Computer Aided Aesthetics and Its Inclusion in Evolutionary CAD System

محل انتشار:

اولین کنفرانس بین المللی و هفتمین کنفرانس ملی مهندسی ساخت و تولید (سال: 1384)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

This paper introduces a research on the evaluation of aesthetics and engineering functions in the early form or conceptual design stage. Conventionally, one of the normal practices to present new ideas of designs is by hand sketching or using any Computer Aided Design software. However, the field of Computer Aided Design (CAD) lacks the aesthetics evaluation aspect of the design, which is sceptically very crucial in evaluating designs. Moreover, trend towards virtual prototypes replacing physical prototypes are emerging and becoming more popular [1]. Currently, in the world of computer aided design, the integration of styling and aesthetics into the overall product development process has still not been properly achieved, and is sometimes described as still in its infancy [2]. This research has managed to suggest, define and quantify a set of aesthetic and functional elements or parameters, which will be the basis of solid shape evaluation. This achievement will help designers in determining the fulfilment of design targets, where the designers will have a full control to determine the priority of each evaluation element in the developed system. In achieving this, computer software including a programming language package and CAD software are involved, which eventually led to the development of a prototype system called Computer Aided Aesthetics and Functions Evaluation (CAAFE). An evolutionary CAD system called Evolutionary Form Design (EFD), which utilizes GAs, has been available for few years now [3]. It evolves shapes for quick and creative suggestions. However, it lacks the automated evaluation and aesthetics aspects of the design. This research has also worked into the integrating of CAAFE into EFD, which led to a system that could evolve objects based on a selected and weighed aesthetic and functional elements.

کلمات کلیدی:

Aesthetics Computer Aided Design Genetic Algorithms

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