




Computing in Engineering and Technology pp 855-865 | Cite as

Automatic Interacting Hole Suppression from CAD Mesh Models

Authors

Authors and affiliations

Vaibhav J. Hase , Yogesh J. Bhalerao, Saurabh Verma, Vishnu D. Wakchaure

Conference paper

First Online: 17 October 2019

1

432

Citations Downloads

Part of the [Advances in Intelligent Systems and Computing](#) book series (AISC, volume 1025)

Abstract

This paper reports an algorithm to recognize and suppress interacting holes from CAD mesh models. The method includes hybrid mesh segmentation and template matching. **The algorithm involves three steps, viz., preprocessing, hybrid mesh segmentation, and hole recognition and suppression. The hybrid approach is leveraged for interacting hole detection and parameterization along with hole chain. Finally, interacting holes are suppressed by the hole-filling algorithm.** This algorithm has been implemented in VC++ and has been extensively tested on test cases extracted from various benchmarks, demonstrating the ability of the proposed algorithm to recognize and suppressed interactive holes, and it is found to be robust and consistent. The innovation lies in the automatic volumetric and nested interactions, multiple planer hole recognition and suppression without estimating curvature, and feature edge detection. The proposed technique is more effective than the existing approaches. Feature suppression finds application in mesh simplification.

Keywords

CAD mesh model Hybrid mesh segmentation Interacting hole recognition
Hole suppression

Log in to check access

Buy eBook

EUR 149.79

Buy paper (PDF)

EUR 24.95

- Instant download
- Readable on all devices
- Own it forever
- Local sales tax included if applicable

Buy Physical Book 

[Learn about institutional subscriptions](#)

Cite paper 