Abstract

Recycling of engineering design is increasing exponentially in order to reduce the conceptual designing phase time due to rapid increase in technology. This leads to increase in frequent retrieval of the 3D models through web searching mechanism. So, it becomes a necessary challenge to design a 3D search engine which can search 3D models accurately as well as efficiently. The 3D searching is a technique developed to help the web users for extracting 3D models like complex engineering parts, various purpose graphical models, etc. The search engine takes input in the form of queries like text, 2D sketches, 3D sketches, 3Dmodel, 2Dmodel etc. When input queries is matched with the existing model in the database or similar model that are present in the database, the best multiple result is provided to user. This paper describes the basics of query by sketch which takes input by sketching manually with the aid of user interface. This input is normalized and further processed by Voxelization, Skeltonization and create Skeletal graph which is then mapped to database to extract best possible match. However, the main focus of this paper is to discuss the process of Voxelization method in very simple steps, as it plays a very important aspect in 3D searching.
References

11. Pranav Agrawal, “3D Searching”, Global Journals inc.(USA) 0975-4172 and Print ISSN: 0975-4350
12. Natraj Iyer, Kuiyang Lou, Subramaniam Jayanti ,et. al., “Early Results from 3DESS: A 3D Engineering Shape Search System”, School of Mechanical Engineering, Purdue University West Lafayette IN 47906, USA
13. XuHaili, Wang Heng, Zhu Longbiao and HuaGuoran, “ Reading and voxelization of 3D models”,School of Mechanical Engineering, Nantong University, Nantong, Jiangsu, China.

Index Terms

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Keywords

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