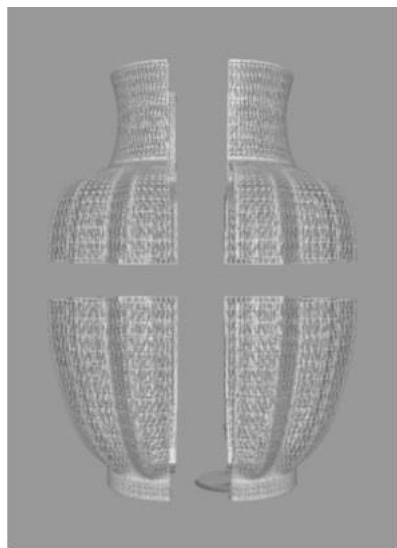


Reassembly of Synthetically Fractured Objects

Ömer ÇAKIR ve Vasif NABIYEV
Karadeniz Teknik Üniversitesi
Bilgisayar Mühendisliği Bölümü

PROPOSED REASSEMBLY SYSTEM



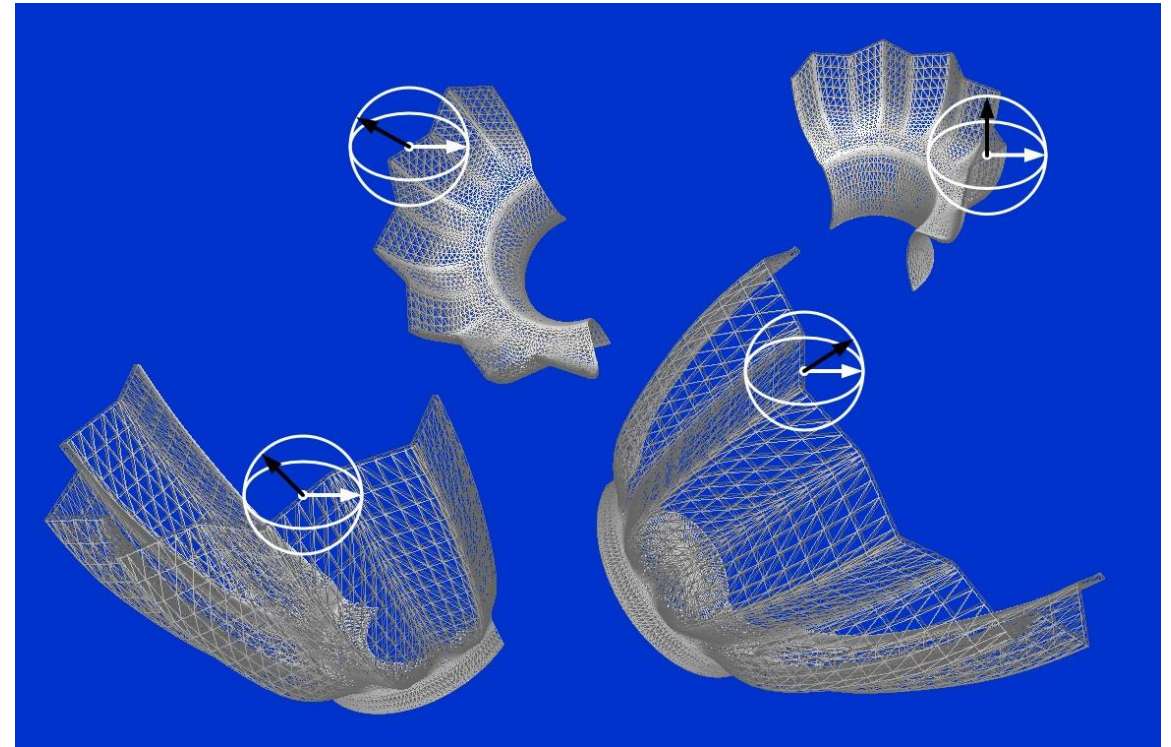
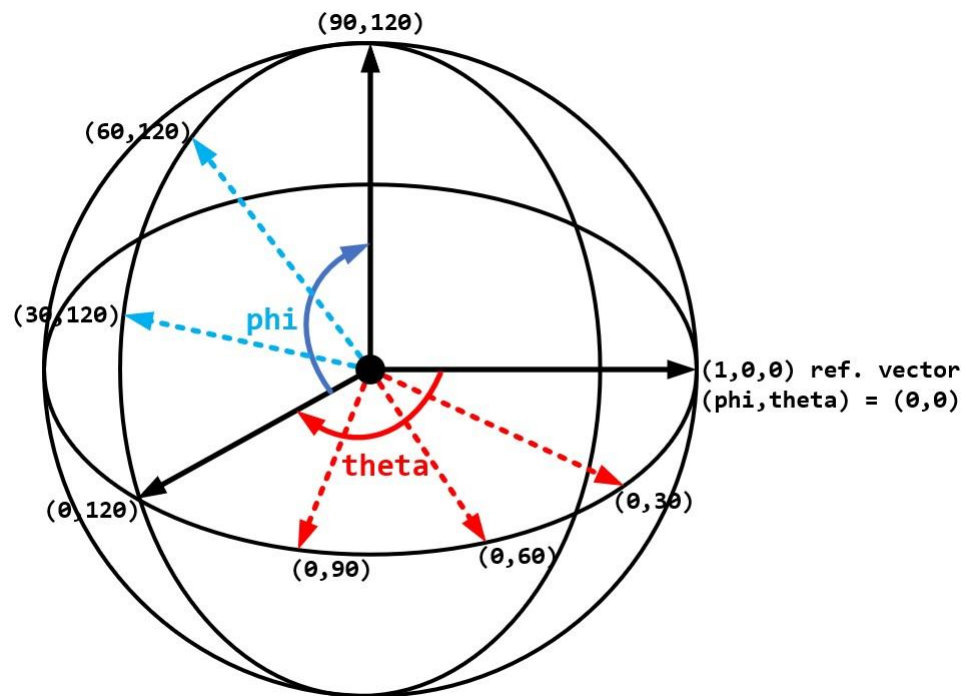
FRACTURING

**SEGMENTATION
MATCHING**

ALIGNMENT

MERGING

ALIGNMENT

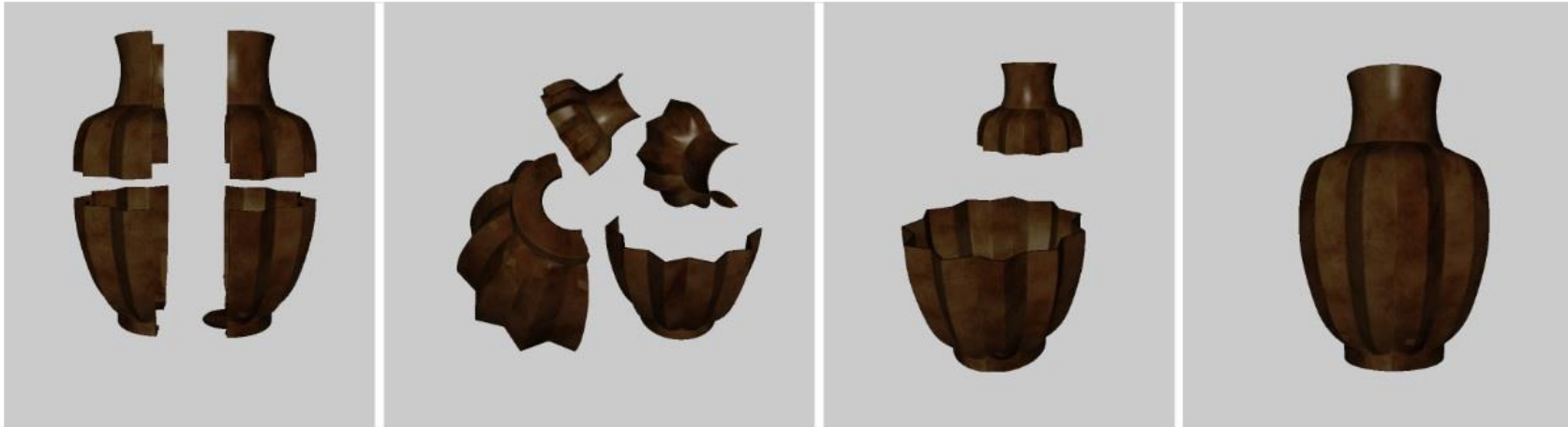


<http://ceng2.ktu.edu.tr/~cakir/files/icatces2019/unitSphere.mp4>

DEMO

<http://ceng2.ktu.edu.tr/~cakir/icatces2019>

REASSEMBLY OF SYNTHETICALLY FRACTURED OBJECTS



Watch the screen-captured movie of the reassembly system by clicking the image above

Abstract. In this paper we present a reassembly system for synthetically fractured 3D objects. Given as input synthetically fragmented parts of the tetrahedralized 3D vase model, for segmentation and matching stages we classify faces into two divisions whether they belong to the original model or fracture surface using indices of shared triangles as background knowledge. Then the vase model is reconstructed using an alignment algorithm based on unit sphere coordinates approach. The system is evaluated on several synthetically fracturing scenarios. The performance of the proposed system indicates that all reassembly computations are done in real-time.

Keywords: reassembly, fractured objects, 3d puzzle.

TEŞEKKÜRLER...