What is Digital Geometry Processing?

Digital geometry processing is a branch of mathematics and computer science that deals with the design of algorithms and techniques for analyzing and manipulating geometric data. As a discipline, it bridges the gap between the acquisition and production of complex 2d and 3d digital content, through operations such as surface reconstruction from point clouds, smoothing for noise removal, shape simplification and deformations for interactive design. Polygons meshes often serve as the primary form of surface representation on which such operations are developed due to their conceptual simplicity and flexibility.

The diagram below, taken from [Botch el al.]'s Polygon Mesh Processing, represents the typical geometry processing pipeline.

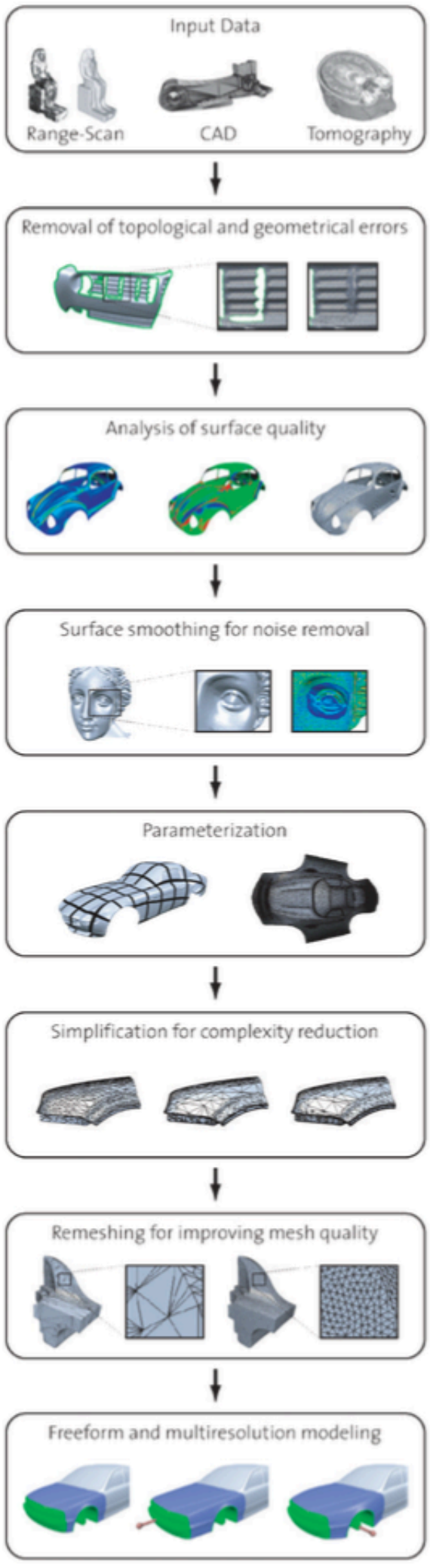

Figure 1. Geometry processing pipeline. (Image from [Botsch et al. 06b]