

# Topology Optimization for Computational Fabrication

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## Abstract

*Additive manufacturing (AM) and topology optimization (TO) form a pair of complementary techniques in transforming digital models into physical replicas: AM enables a cost-effective fabrication of geometrically complex shapes, while TO provides a powerful design methodology for generating optimized models, which are typically complex from a geometric perspective. The potential of both techniques has recently been explored in graphics, resulting in fantastic applications especially regarding structural and aesthetic properties of fabricated models. In this tutorial, we start from the fundamentals of AM and TO, and proceed to advanced TO techniques which steer the optimization process, i.e., taking into account the manufacturing as well as aesthetic appearance.*

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