

# Fabrication-Aware Shape Decomposition

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Fabricating an object starting from a digital representation of it is a complex process that requires both geometric knowledge and manufacturing insight. Part of this complexity depends from the fact that each manufacturing technology imposes a number of geometric constraints that must be fulfilled to be able to create physical replicas of our digital meshes [1]. Some of these constraints are hard (e.g. size constraints imposed by the machine at hand) while some others can be relaxed (e.g. minimize overhangs in 3D printing). An effective way to address both hard and soft constraints consists in splitting a complex object into smaller pieces, such that each piece endows strong geometric properties which are beneficial for the fabrication technology at hand. In this talk I will first survey the most recent advances in shape decomposition for fabrication, then I will present some of the results of my latest research in the field. Both additive and subtractive manufacturing technologies will be considered.

## References

- [1] M.Livesu, S.Ellero, J.Martínez, S.Lefebvre, M.Attene. From 3D Models to 3D Prints: an Overview of the Processing Pipeline. *Computer Graphics Forum*, 36(2):537–564, 2107.