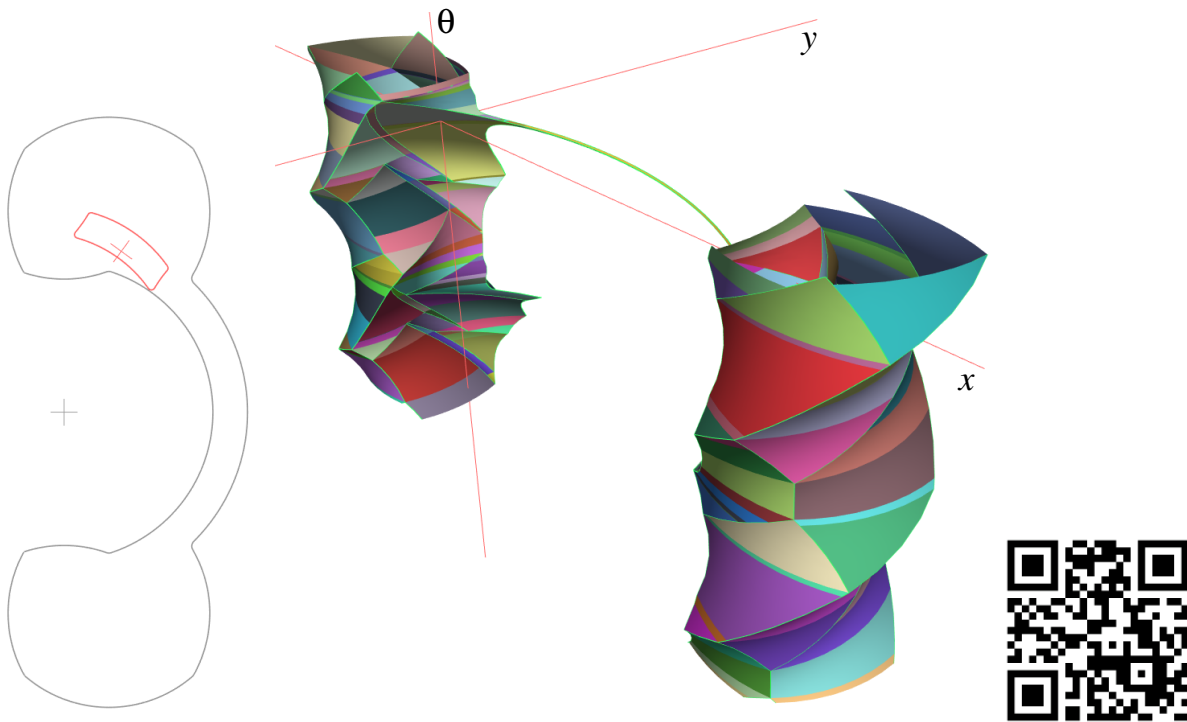


CSC 547/647 – Fall 2021

Computational Geometry

Victor Milenkovic

Robot (red) navigating narrow corridor. 3D visualization of robot configuration free space. QR of video demo.



Computational Geometry gives us a way to **compute** with the **shapes** of objects, not just what they look like. For instance, is it possible to get the new couch up the stairs of your apartment? Computational Geometry has important applications in **Geographical Information Systems** (such as Google Maps), **Computer Aided Design and Manufacturing**, and as we have seen in a recent Computer Science Colloquia, **Biomedical Image Analysis** and **Chromosome Structure**.

In Fall 2021, CSC547/647 will cover the following areas:

Line Segment Intersection,	Linear Programming,
Point Location,	Voronoi Diagrams,
Delaunay Triangulations,	More Geometric Data Structures,
Convex Hulls,	Binary Space Partitions,
Robot Motion Planning,	Visibility Graphs.