



Technion-Israel Institute of Technology
Computer Science Department
Center for Graphics and Geometric Computing



CGGC Seminar – M.Sc. Talk

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Kernel-based Construction Operators for Boolean Sum and Ruled Geometry

Boolean sum and ruling are two well-known construction operators for both parametric surfaces and trivariates. In many cases, the input freeform curves in R^2 or surfaces in R^3 are complex, and as a result, these construction operators might fail to build the parametric geometry so that it has positive Jacobian throughout the domain.

In this work, we focus on cases in which those constructors fail to build parametric geometries with a positive Jacobian throughout while the freeform input has a kernel point. We show that in the limit, for high enough degree raising or enough refinement, our construction scheme must succeed if a kernel exists.

In practice, our experiments, on quadratic, cubic and quartic Bezier and B-spline curves and surfaces show that for a reasonable degree raising and/or refinement, the vast majority of construction examples are successful.

The lecture will be held on Sunday, 15.01.2023, at 13:30, Taub 301

הזמנה זו מהווה אישור כניסה עם רכב לטכניון