Mathematics and CS Seminar

Algebra of Motions

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If we model the group of Euclidean displacements by the dual quaternions, then we can represent motions in 3D-space by polynomials with dual quaternion coefficients. Kinematic/geometric statements about the motions are reflected by algebraic statements in the algebra of these polynomials. In particular, a variation of the fundamental theorem of algebra translates to a construction of linkages tracing a prescribed curve.In the second part of the talk, we general the concepts introduced in the first part to nonrational curves and apply them to analyze paradoxically moving linkages, i.e., linkages that should not move according to a parameter count of free variables and constraints.

Thursday, December 14, 2017 01:00pm - 03:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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