Technische Berichte

Autor(en): Aaron Pereira and Matthias Althoff

Titel des Berichts: A Cartesian-Space Method for Calculating Human Reachable Occupancy

Abstract: In previous work, we calculated overapproximative sets of human arm positions using a kinematic parameterisation of the human arm, for use in a formally-verifying robot trajectory planner. This has the drawback that inverse kinematics calculations are computationally expensive. In this technical report, we present another method, not requiring inverse kinematics but using the maximum Cartesian accelerations, velocities and positions attainable by a human. This can offer significant computational advantage, which is critical for a real-time motion planning application.

Stichworte: Human-Robot Co-Existence, Safety in Robotics, Formal Methods

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