

Comparing HTN Planning Method with Grammar-Based Approach in Generative Design

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ABSTRACT

In mechanical conceptual design, the more design alternatives generated, the higher the benefit to designers. In this paper we explore the use of HTN planning, an artificial intelligence planning method, to perform generative conceptual design. The HTN planning method is “goal driven” while the grammar method is “feasibility driven”. We mapped a grammar-based generative method for conceptual design of Meccano carts into an HTN planning problem format. An initial comparison of the two methods is provided in this paper. Exploring the use of a planning method provides a benchmark for future research in generative design.