Application of Genetic Algorithm to optimize Cut-order Planning solutions in Apparel industry

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Abstract

The fabric cutting process acts as the second major cost contributor of the apparel manufacturing process due to the high expenditure on marker making, fabric spreading and cutting, which is about 5-10% of the total manufacturing cost. Researchers highlight that an effective cut order plan results in reducing the abovementioned cost factors of cutting process, thereby reducing the entire manufacturing cost, to a greater extent. This study aims on optimizing the cut order plan solutions using Genetic Algorithm (GA) principles. Optimization algorithm was proposed based on GA principles and the computer-based program was introduced to execute the algorithm, under MATLAB environment. The performance of proposed algorithm was then compared with respect to the available methodologies of generating cut-order plans available in Sri Lankan Apparel industry.
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