Machine-Assisted Design of Business Process Models Using Descriptor Space Analysis

In recent research, increasing attention is being paid to automating the design of business process models to simplify an often tedious and error-prone task. This automation aims to reuse constructions from pre-existing models, saving time and helping novice designers. Although much work has focused on improving existing models, few have explored the creation of new models.

This study fills this gap by proposing a generic method to guide business analysts in designing new business process models. This method is based on the extraction of operational logic from existing models, coded as descriptors. These descriptors form a space where the distances between the coordinates are calculated according to the operational proximity of the processes. The results of an empirical evaluation confirm the effectiveness of this approach in supporting the design of new process models.

Contributions of this research include: generic support for the design of new business process models, the use of objects and actions for operational content analysis, and the extension of the PDC model to extract business logic from process repositories. This method has been implemented in a software tool and demonstrated through a case study in the airport industry, highlighting its practical applicability.