# Framework for the Automation of Construction Task Matching from Bills of Quantities using Natural Language Processing

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**Abstract**

During the budgeting stage of construction processes, construction companies must assess each task's scope from the Bill of Quantities (BoQ) and map them individually to an internal database. When non-standard BoQs are used, the mapping process is highly dependent on human judgement, as each task is interpreted individually based on its description, classification code and other text elements, besides drawings and BIM models. Even though this assessment influences companies' bid quality, surveyors carry it out manually with almost no automation.

In this sense, a methodology and framework for developing and implementing a Natural Language Processing (NLP) task-matching algorithm are presented. This study sets out to develop datasets that represent a variety of tasks in Construction, build an algorithm capable of task matching across different disciplines, and reduce the need for expert validation of the matching results. Furthermore, the implementation framework structures the algorithm in the procurement workflow and drives future developments.

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