Abstract

In application development, achieving synergy between evolving software and elicitation process outcomesemerges as a foundational objective. This endeavor is empowered by the role of text analysis, a tool that adeptly uncovers intricate data relationships and contextual intricacies. This is especially pertinent given the textual attributes of System Requirements Specification (SRS) information. Optical Character Recognition (OCR) adds depth to comprehension by converting images into text. However, challenges surface due to variances between functional requirements and the design's control and affordance components, arising from divergent interpretations of functional requirements during elicitation. Our focal point resides in crafting an application to evaluate the alignment between UI design and the textualcore of functional requirements. This study reveals 13 Functional Requirements (d1-d13) and categorizes two control/affordance component documents (d14-d15). The integration of text analysis, steered by word2vec, drives an alignment process, culminating in a notable 0.397 score. Recommendations pivot on the Cohen's Kappa index; values below 0.21 prompt adjustments for alignment at a "sufficient" level (0.21or higher). The culmination of research materializes in an advanced application adept at processing txt files, skillfully extracting inputs via text analysis, and semantically evaluating alignment through Word2Vec. It offers insights for data instances where standards fall short, firmly rooted in Cohen's Kappa index principles. This application functions as a comprehensive repository, methodically outlining enhancement suggestions, assessed against the backdrop of Cohen's Kappa index.

Keywords — Control and affordance components, User Interface, Text analysis, Functional Requirements, Semantic Similarities