Evaluating the Impact of GUI Similarity between Android Applications to Measure their Functional Similarity

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Abstract

Finding similar or related Android applications is a feature in popular search engines. An app's appearance is usually the first indicator of similarity. In this paper, the impact of GUI similarity for Android applications in measuring their functional similarity is evaluated. Accordingly, a number of Android applications will be analyzed to identify their resources and extract the most commonly used appearance features from each app’s package kit (APK) and its xml layouts. An algorithm that automatically extracts these features is designed and developed. A sample of 50 Android apps from Google play store was chosen, and two separate experiments were performed: one using the presented method to measure appearance similarity, the second using one of the available methods to measure functional similarity, then the results were compared. Results show that there is a relationship between appearance and functional similarities, where a strong relationship exists between appearance similarity and most of the functional similarity anchors.


Index Terms

Computer Science       Information Sciences

Keywords

Appearance Similarity, Functional Similarity, Adaptive Programmable Interface Unit, Android Package Kit (APK). Search engine