Abstract: Static Analysis Method for Touch-Screen UI Generation on Mobile Application

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Abstract

In order to service an existing application without a touch-screen UI to touch phones, an on-screen keyboard that implements a virtual keyboard on the touch screen is needed. Previous on-screen keyboard generation methods generate fixed keyboard layouts that include every key defined by a system, resulting in smaller and inconvenient keys. Further, the recently studied dynamic analysis method analyzes keys used in source codes during run-time to generate on-screen keyboards optimized for applications but it generates too much overhead to control. In this study, we adopt the notion of key set graphs that store the UI status information of applications to identify UI states by referencing the graphs and generating optimized on-screen keyboards based on the static analysis method. This method uses effective graph data structures to effectively circumvent the overhead issues featured in the dynamic analysis method.