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Paper Title: **Examination of the Level of Inclusion of Blind Subjects in the Development of Touchscreen Accessibility Technologies**
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Abstract:

Touchscreens have become the dominant interface for mobile devices, and mobile devices have become increasingly central to the average person's everyday life. Unfortunately, touchscreens offer little non-visual feedback necessary for blind users to fully utilize them, leading to the development of accessibility hardware and software. Unfortunately, previous research and development in these areas, particularly as it relates to the sense of touch and haptic feedback mechanisms, has been surprisingly lacking in blind participants and research on blindness itself. This paper thus aims to explore the consequences of this situation, as well as to provide a collection of relevant work on both blindness and developing touchscreen technologies. It does this by first examining how blindness interacts with the sense of touch and information processing. This is then compared with a sampling of the ongoing developments in haptic feedback technologies for touchscreens. This sample is examined for the participation of blind subjects or relevant research in order to determine the existence, nature and extent of any anomalies in participation or literature.. Application and software development is then similarly compared and both are examined for potential standardization systems that could improve their overall utility and accessibility. Following this is a look at the consequences, both documented and potential, that could stem from inadequate involvement of the relevant subjects and research. Penultimately, arguments in favor of improved development as a benefit to both blind and non-blind users are put forward. Finally, more recent research is reviewed and used to reinforce the central conclusion that, in light of the variations in information processing by blind users and the wide variety of potential software/hardware configurations, there is simply no substitute for the inclusion of blind subjects in further research and development.

APA Formatting.