

GuideCall: A Remote Video Call Assistance for Blind and Visually Impaired People

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Blind or Visually Impaired (BVI) individuals often face many challenges while exploring new places that are not very accessible or performing many daily tasks. Getting assistance from strangers is not always desirable in such situations. With the advancement of technology, BVI individuals can utilize assistive technology like screen readers or accessibility features on smartphones to solve some of these challenges, but there are many tasks that still require some sort of human assistance. Some current approaches to provide remote assistance are either too expensive or do not use helpers whom a BVI individual can fully trust when receiving assistance. This research project develops an Android application called GuideCall that enables BVI individuals to draw assistance through a video call from their own sighted friends or relatives. With a single click, a BVI user can request assistance whenever needed from trusted helpers. One among the trusted helpers is paired with the BVI individual through a video call. In addition to general assistance, the remote helper can track a BVI user's location surroundings through both outdoor and indoor maps integrated into the application. Preliminary evaluation results show GuideCall to be an inexpensive and effective tool for enhancing the opportunities for BVI people to be independent anywhere by providing the assurance that assistance is one click away.