Computer Vision-based System for Blinds and Visually Impaired

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1 Introduction

According to [1] more than 250 million persons have moderate to severe vision impairment (≈ 36 million are blind). During past decades significant effort was devoted by various authors to develop computer vision and other sensor based aids (e.g. [2], [3], [4], [5]) for helping the blind and visually impaired users to perceive the world around. However, computer vision is rapidly evolving field, and systems based on aforementioned approaches often lack accuracy and reliability in real-world conditions. In this article we describe realistic system, which allow to use modern computer vision methods for compensation of lost or impaired vision function in humans. We assume that mobile device equivalent or very similar to smartphone is used to perceive visual information from the environment. Since most of computer vision algorithms require rather intensive computational power exceeding than that of smartphone, we also assume that image processing itself is conducted in separate machine, connected to the mobile device via Internet, and calculated audio or tactile feedback signal is transmited to the mobile device for presentation to the user.

2 Method

3 System

4 Discussion

References

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