



Visually impaired users have difficulty finding their way in an office environment; their options are limited to either asking someone for help or stumbling around by themselves, both of which are inconvenient. An automated approach is proposed, one that is cost-efficient and maintainable without the need for experts. A smart-phone with a built-in camera is a ubiquitous hand-held device that provides the necessary computational power to detect figures in the environment, and by placing an identifiable label at landmark locations in the office environment computer vision techniques can be used to offer visually impaired users an effective tool for way-finding.

Printed using a color printer, the label provides a low-cost, low-maintenance alternative to other automated solutions such as wireless transmitters, radar systems, and even braille signs. The smart-phone also enables a host of user-friendly modalities such as changes in audio pitch and volume, and even text-to-speech. The viability of the proposed system is limited by the smart-phone's relatively low computational power, but a working prototype shows that a careful choice of efficient algorithms translates to promising results.