



Thesis Project Form

Title (tentative): Assistive tool for crossing street in low-vision subjects

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Description

Motivation and application domain

Visual impairment or vision loss is a severe condition that seriously affects the life of the individuals suffering from it. The ability to see, gives people access to the world around and to the hazards from the environment that could endanger their lives. One of the most important problem for low-vision/blind people in everyday life situations is the crossing of streets due to the difficulties/impossibility to see traffic-lights and zebra stripes, to avoid other people or obstacles.

General objectives and main activities

The main objective of the thesis is the development of a wearable assistive device to guide low-vision/blind people during street crossing. The device should be able to determine the direction of the zebra crossing and the status of the traffic-light, analyse it and give a biofeedback to the user to safely cross the street. During the crossing the application will help the visual impaired people giving information about the position of obstacles/people.

Training Objectives (technical/analytical tools, experimental methodologies)

The candidate will learn how to implement a software application using python and its main library for computer vision, data analysis and machine learning.

Place(s) where the thesis work will be carried out: DIBRIS Bioengineering Lab (Via Opera Pia 13)

Additional information

Maximum number of students: 1