**MINI PROJECT – II**

**(2018-19)**

# Artificial Vision

# 

**SYNOPSIS**



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**About the Project:**

**Overview:**

Our system uses Artificial Intelligence to help the people who are visually impaired. It aims to eliminate the challenges that they have to face in their day to day lives.

It uses a camera to sense the surroundings. In order to provide the blind people hearable environment, this project focuses on the field of assistive devices for visual impairment people. It converts the visual data by image and video processing into an alternate rendering modality i.e audio that will be appropriate for a blind user. Therefore, the use of artificial intelligence for modality conversion, from the visual modality to another.

It not only helps the blind to be independent but also eliminates the possible threats that they would have to face.

**Motivation:**

Once in Allahabad, we encountered a blind person on the railway station, begging for help to reach the bus stop. The helplessness of that person that they can't even walk alone through a busy street or through a park. They always need some assistance from others. They are also curious about the beauty of the world; there is excitement to explore the world, and to be aware of what is happening in front of them. Even though they can find their own things without anyone's need made us realize, the difficulties that people without eyesight have to face in their day to day lives.

In this 21 century when we have access to ample technical tools, the inability of that person inspired us to come up with a solution, which aims to assist them by helping them with the description of everything that their eyes could have sensed, such as, the activities taking place around them and the obstacles that lie in front of them, through a speech output.

**Future Prospects:**

1. We will implement this project into more real form by developing a device

using Raspberry Pi which will be more effective and efficient than operating a mobile phone.

1. We will fortify this project with facial recognition system so that the blind person can identify who is front of him/her (whose data is stored by him/her in the dataset).
2. We will make this system more intelligent by equipping it with a guiding feature, to tell the blind person about the direction he should go in order to reach his destination.

**Requirements:**

1. **Hardware:**

* Laptop
* **CPU:** Intel(R) Core(TM) i5-8250U CPU @ 1.60GHz, 1800 Mhz, 4Core(s), 8 Logical Processor(s)
* **GPU:** NVIDIA® GPU card with CUDA® Compute Capability 3.5 or higher
* 4 GB DD4 RAM
* 3mb cache memory

1. **Software:**

* Anaconda
* TensorFlow
* Keras