

## **Text Extraction from Images Captured via Mobile Device.**

### ***What are you want to work on in Computer Vision?***

In this project I will use Image Segmentation, Image Enhancement, Edge Detection, Labelling of Components and Optical Character recognition techniques of Computer Vision.

### ***What are the challenges involved?***

The primary change is developing a robust and adaptive mechanisms which can not only incorporate environmental factors, present in images like lighting conditions, illumination, reflection etc. but also be able to handle diversity present in text images like font size, shape of the object on which texts is written.

### ***Give a brief but precise description or definition of the problem or question.***

My objective is to develop a software application for text extraction and recognition for mobile captured images. In addition, extracted text will be translated into another language so that a person travelling at foreign places can understand, instantaneously, meaning of various sign board and available text information in his/her surroundings.

### ***Where are you getting the data, with appropriate references?***

1. The Chars74K dataset <http://www.ee.surrey.ac.uk/CVSSP/demos/chars74k/> for testing methods responsible for converting character images into text.
2. Visual Geometry group's datasets <http://www.robots.ox.ac.uk/~vgg/data/text/> for testing methods responsible for text area extraction and image to text conversion.

### ***Who you will be working with?***

I am (Deepak Sharma) working solely on the project.

### ***How will you evaluate your method?***

1. I have gone through few generals and research paper which have suggested methods for achieving above mentioned objectives. So I will implement intermediate methods and compare my partial results with the expected results mentioned in journals and research papers. Most of the times I will apply various methodologies for achieving common objective and adopt the one which will be consistent and robust for my test data samples.
2. I will implement loosely coupled software components which can be replaced by better alternatives at later stage of the development.
3. For testing the application I will use an evenly distributed test image set, in which images taken under various devices, lightning conditions, font type, font size, background color, and font color will be available. So that adaptiveness and robustness of the methods can be examine.

### ***How will you measure performance or success of your method?***

1. Success of the method will be evaluated on the bases of the results shown by the application for any given a random set of input images taken from above mentioned dataset. Like: "for 85% input images application was able to detect text and convert the same to text".
2. At initial stage of development I will be following "**Text Extraction from Images Captured via Mobile and Digital Devices Jian Yuan, Yi Zhang, Kok Kiong Tan, Tong Heng Lee Department of Electrical and Computer Engineering National University of Singapore**" Research paper, so application must work for their limited input dataset. At next level by using advance image extraction approaches and machine learning technics more complex text images will be converted into text. So the performance of the application can be reported for various levels/categories, representing the complexity of the problem offered by input image set. Future version of the prototype will aim to solve more advance level of problem by adding, replacing or enhancing various modules of the application.