"Gheorghe Asachi" Tehnical Univesity of Iași
Faculty of Computers and Automatic Control
Image Processing - Project

Initial report - Recognition and identification of canned beverages

TEAM: Misc02

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1 Subject description

The chosen subject is the recognition and identification of canned beverages of similar sizes using an individually acquired data set of at the minimum 500 images. The purpose of the project is to create an intuitive way for visually impaired people to recognize cans of similar sizes which hold no distinct tactile features.

S.M.A.R.T. objectives:

- **To create a large dataset**:
  - *Specific*: To end up with a data set containing at least 500 images
  - *Measurable*: To use our mobile phone cameras to make photo
  - *Attainable* : We've already made up more than half of the data set
  - *Relevant* : The larger the data set, the more accurate the recognition will be
  - *Time-bound*: We hope to have a complete set of images by the end of the 4th week.
- **To create a program which helps distinguish different objects**:
  - *Specific*: We hope to be able to differentiate different brands of beverages from each other.
  - *Measurable*: We'll use machine learning and image processing to attain this goal.
  - *Attainable* : We have already documented and selected the specific technologies we will use.
  - *Relevant*: We hope to create program that can be further developed into an application that can help visually impaired persons.
  - *Time-bound*: Our goal is to finish the project by the end of the semester.

To count a few of the tehnological challenges we will face in the making of the project, the program will have to be able to recognise the cans from many different angles as well as from different sides which will lead to the need of a large and diverse data set.

By the end of this project we hope to have a program in which we can input an image of a canned beverage (from a brand that exists within the confines of our data set) and be presented with the name of it. The finished program could be later implemented into a mobile app which offers audio

support for visually impaired persons to help them distinguish canned drinks from one another without needing the help of other, a task which would be impossible considering the lack of tactile defining features of cans which share the same size and texture as others.

2 Proposed workload

Identification and allocation of tasks

Task ID	Task description	Team member
Data set acquisition	To obtain images for the data set	m1, m2
Initial report	To create and document the initial report	m2
Research relevant technologies	Obtain knowledge into M.L. and I.P.	m1
Develop prototype	To create a working prototype	m1, m2
Final report documentation	To create the documentation used in last presentation	m2
Final report powerpoint	To create a powerpoint presentation for the last presenation	m1
Finish program	To add to the prototype for the final version of the program	m1, m2

Git repository: lupii nebuni

3 References