**MINISTRY OF EDUCATION AND TRAINING**

**FPT UNIVERSITY**

Capstone Project Document

The Traffic Sign Recognition and Training

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| **Group 2** | |
| **Group member** | Mai Văn Tân – Team Leader – SE90061  Bùi Việt Phong – Team Member - SE60747  Hồ Đắc Nghĩa – Team Member - SE60628  Trần Lê Tuấn – Team Member - 60350 |
| **Supervisor** | Mr. Kiều Trọng Khánh |
| **Ext. Supervisor** | N/A |
| **Capstone Project code** | TSRT |

-Ho Chi Minh City, 01/2014-

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***ACKNOWLEDGEMENTS***

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# Report No. 1 Introduction

## Project Information

* Project name: **The Traffic Sign Recognition and Training**
* Project Code: **TSRT**
* Product Type: **Website, Phone Application**
* Start Date: **January 6th, 2013**
* End Date:

## Introduction

Now a day, the traffic system is expand more than before. Beside that the traffic sign use to control traffic is developed to help people when join in the traffic. In Vietnam, we have more than 200 traffic signs, this may cause the difficult to people when meet a new traffic sign. On the other hand, internet and smartphone is more popular in Vietnam. Now it’s easy to have a smartphone with internet connection. That is the reason we want to build a system to help people find information about any traffic sign easily. So people can know more about the sign and traffic rule in each traffic sign, help them join in traffic easier and safer.

## Current System

Below are some current system:

* Search using book:

+ Advantages: clearly, accurate information.

+ Disadvantages: slow and not update regularly.

* Current application:

+ Advantage: update regularly, easy to use.

+ Disadvantages: few information (just have basic information about traffic sign), search slow.

* Using internet:

+ Advantages: provide updated information.

+ Disadvantages: search slowly, need internet connection, too many useless information.

## Problem Definition

The disadvantage of current system:

* Difficult to search the traffic sign (unknown the name or not remember the traffic sign).
* Provide few information, just has basic information, not have penalty fee.

## Proposed Solution

* Develop a recognition system that support auto detect and recognize traffic sign using smartphone’s camera.
* Support more information about the traffic sign: penalty fee, view history.
* Support user learn traffic sign.

### **Feature functions**

* + Admin

Admin can manage the system: update system, configure system.

Admin can manage account:

* + - Manage Staffs: provide permission role, add/delete/edit staffs.
    - Manage users: add/delete/edit users.
  + System
    - Detect and recognize traffic sign.
    - Provide information about traffic sign.
    - Support user learning traffic sign.
    - Support staff training new traffic sign.
  + Staff
    - Manage users: deactivate users, active users.
    - Training new traffic sign.
    - Add/update/delete traffic sign.
    - Make the statistic: statistic users by time, statistic wrong detection and recognition.
    - Import/export database.
    - Manage user’s report: check and statistic report.
  + Users
    - Search/view traffic sign.
    - Make report wrong traffic sign.
    - View history traffic sign.
    - Add/remove favorite traffic sign.

### Advantage and disadvantage

The advantage and disadvantage of the proposed solution:

* Advantage:

+ Easy to search traffic sign by take camera picture.

+ Provide more information about traffic sign like penalty fee.

+ Support user learn traffic sign.

* Disadvantage:

+ Must have internet connection.

+ Recognition accuracy not reach 100 percent.

## Functional Requirement

Function requirement of the system are listed as below:

### Detect and recognize traffic sign

* Detect candidate area from upload image.
* Recognize traffic sign from detected area.

### Account management

* Normal users can register new account.
* Staffs account are created by admin.
* Admin can manage account: add/edit/delete account.
* Staff can manage user account: active/deactivate account.

### Traffic Sign Management

* Staff can add/update/delete traffic sign.

### Report Management

* Users can send report about traffic sign.
* Staff can check/view report.

## Role and Responsibility

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **No** | **Full Name** | **Role** | **Position** | **Contact** |
| 1 | Kiều Trọng Khánh | Project Manager | Instructor | khanhkt@fpt.edu.vn |
| 2 | Mai Văn Tân | Developer | Team Leader | tanmvse90061@fpt.edu.vn |
| 3 | Bùi Việt Phong | Developer | Team Member | phongbvse60747@fpt.edu.vn |
| 4 | Hồ Đắc Nghĩa | Developer | Team Member | nghiahdse60628@fpt.edu.vn |
| 5 | Trần Lê Tuấn | Developer | Team Member | tuantl60350@fpt.edu.vn |

Table 1: Roles and Responsibility