**Back to Future: Intelligent Motorways**

**Elevator Pitch:**

RPA for the supervision of motorways to identify traffic violators with insurance/registration backlogs, stolen vehicles, fine defaulters and also notifying major accidents to the nearby hospital, owner and police patrol.

It is well-known that non-compliance of traffic rules and other violations has been increasing constantly during the recent years. Though traffic control devices and traffic guards have control within city limits, in highways it is a significant problem. Hence the proposed prototype automates supervision of motorways for traffic violation and accidents. A dummy website mimicking traffic information is hosted using WebHost000 is designed for insurance details and police records. The automation is designed as a Snippet workflow in UiPath Studio.

Static image frames are considered for screen scrapping and the scrapped vehicle number plate using OCR is stored in the relevant workbooks. The vehicle number is scanned for traffic violation. If there is a traffic violation then an SMS notification (Twilio Activity) is sent to the authorities and owner pertaining to the type of traffic violation. The traffic violation details are pushed to Cloud for persistant storage using Salesforce Automation.

At the outset accidents are also identified through the mounted Arduino prototype with Peizo vibration sensor and GPS device. The vibration and GPS values pushed to Salesforce Cloud are extracted using Salesforce Automation. The extracted value using Salesforce Connector Activity (from UiPath GO) includes vibration and location values from which the type of accident is determined. If the vibration value is less than 100 then it is a major accident and the same is notified to the nearby hospital, owner and Police Patrol for immediate intervention.

**## Challenges I ran into**

* Scrapping images of vehicle number plates
* Importing custom activities for SMS notification
* Salesforce automation

**## Accomplishments that I'm proud of**

* Preethi Harris -UiPath International certification
* Bhavesh Gupta-UiPath diplomas in level 1 & level 2
* Karthik Prabhu-UiPath diplomas in level 1 & level 2

**## What I learned**

* How to use Robotic Process Automation using UiPath studio to realworld problems
* Screen scrapping and data scrapping of details
* Handling Excel Workbook activities
* Salesforce automation
* Twilio SMS activity

**## What's next for Back to Future: Intelligent Motorways**

In the proposed prototype the traffic violators are notified via SMS that includes type of violation and the fine incurred. The future enhancement can include automatic online fine payment, for traffic violators through Payment gateway(s).

**Extra**

The proposed work is divided into 2 major categories:

The first being the traffic violation and the second category, the accident detection

This UiPath workflow begins with the Scrapping of insurance and Police records from the dummy government website designed using WebHost000. At the same type the values from the Peizo Vibration sensor and GPS from the Arduino are pushed to the Salesforce Cloud using Salesforce Connector activity.

Then the vehicle number is scrapped using OCR and the sensed values of Arduino are imported from Salesforce using Salesforce Connector activity.

Using the vehicle number a check is made for traffic violation along with the sensed value from Salesforce Cloud. If the vibration value is less than 100 then it is a major accident.

The final phase of the project is the notification. If there is a traffic violation then an SMS notification (Twilio Activity) is sent to the authorities and owner pertaining to the type of traffic violation. The traffic violation details are pushed to Cloud for persistant storage using Salesforce Automation. Similarly if there is a major accident the same is notified to the nearby hospital, owner and Police Patrol for immediate intervention.