User Manual

for

Traffic Light Optimization
Imagine Interactive Systems (Iminsys)

Prepared by Team Alpha:

1. TK Lebelo **u15209190 (team leader)**
2. R Rammbuda **u16207948**

Submitted to : Stacey Baror
Avinash Singh
Eunice Hammond

May - November 2020

Contents

1 Installation and Access

1.1 Access

- url: http://ec2-18-220-217-86.us-east-2.compute.amazonaws.com/home/

As the system's user interface is a web page, no installation is necessary on the user's side. The website should simply be accessed through any web browser, such as Google Chrome, Mozilla Firefox or Microsoft Edge.

1.2 Latest version

- A copy of Django is necessary to run the in-development version of the website, as well as Python.
- Clone the repository at GitHub to get started. To clone a GitHub repository to a PC, GitHub Desktop can be used. Follow the guide on the software's page. (See Figure 1.1)
- Once the repository has been cloned, copy everything in your local GitHub folder (under Documents) to a separate folder.
- Open the command line (cmd in Windows, terminal in Linux) and change the directory to the "tl_optimization" subfolder in this new folder.
- Enter the command "python manage.py runserver" in the command line to start the server. It will take a few moments to start the server, and it will then give a local URL from which it can be accessed. (For example, "127.0.0.1:8000".) Enter this URL into your web browser of choice, and append "/network" to the end ("127.0.0.1:8000/network") to arrive at the dashboard. (See Figure 1.2)
- The server can be stopped at any time by pressing CTRL and Pause/Break. The Pause/Break key is typically above the Page Up key and to the right of the Scroll Lock key on a standard QWERTY keyboard.

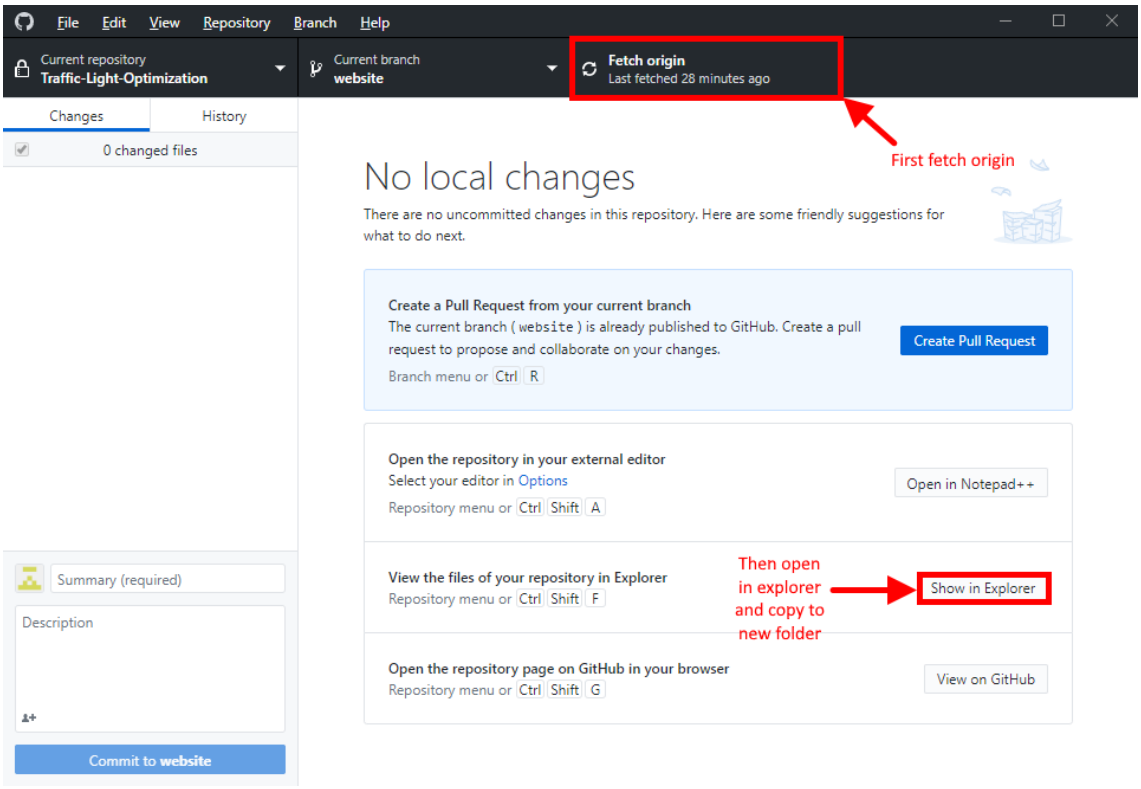

Figure 1.1: GitHub Desktop

```
C:\Users\                                                    \Traffic-Light-Optimization
\tl_optimization>python manage.py runserver
Watching for file changes with StatReloader
Performing system checks...

System check identified no issues (0 silenced).
July 08, 2020 - 19:56:12
Django version 3.0.7, using settings 'tl_optimization.settings'
Starting development server at http://127.0.0.1:8000/
Quit the server with CTRL-BREAK.
[08/Jul/2020 19:56:13] "GET /simulation/ HTTP/1.1" 200 1607
hello
[08/Jul/2020 19:56:16] "GET / HTTP/1.1" 200 8888
[08/Jul/2020 19:56:31] "GET /simulation/ HTTP/1.1" 200 1607
hello
[08/Jul/2020 19:56:34] "GET / HTTP/1.1" 200 8888
```

Figure 1.2: Command line

2 Usage

2.1 Home Page

(See Figure 2.1) When the user visits the website, they will see the dashboard. Here, they can:

- (1) View already existing intersection and add new intersection (see section 2.2).
- (2) Control the simulation of the current intersection and/or delete intersection
- (3) View the simulation; Intersection visualization and simulation area of the interface.
- (4) Update and/or Configure the intersection information (see section 2.3).

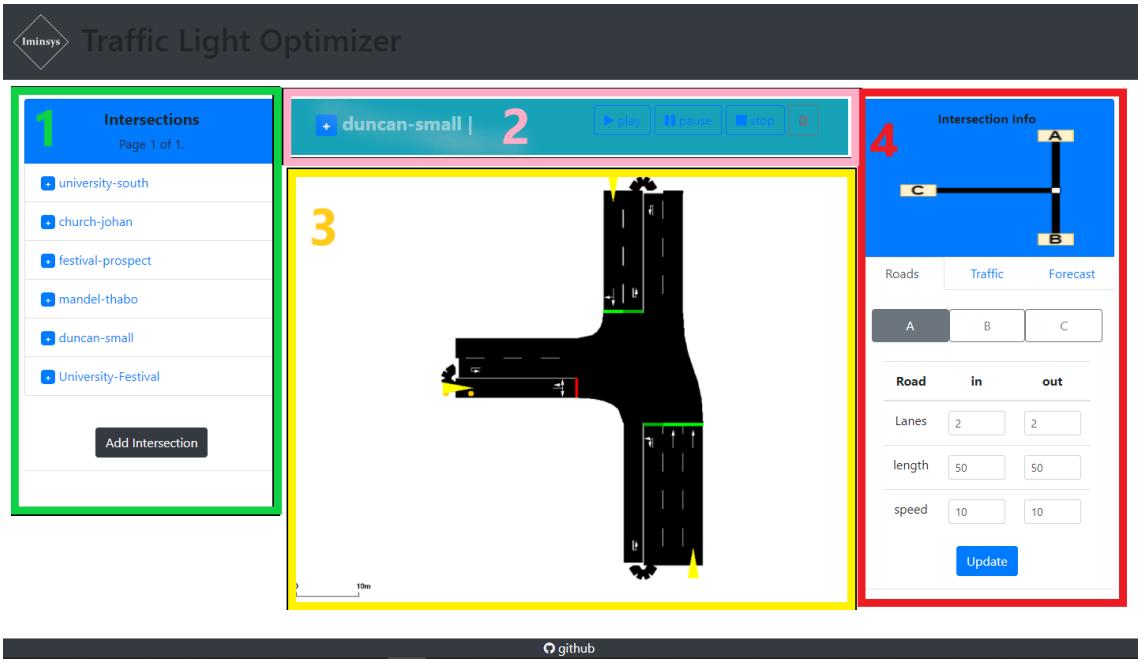

Figure 2.1: Home Page

2.2 New Intersection

(See Figure 2.2) When the user clicks the add intersection button, they will see a dialog box with form to provide intersection settings. Here, they can:

- Add intersection name and select the type of intersection.
- Submit to create intersection.

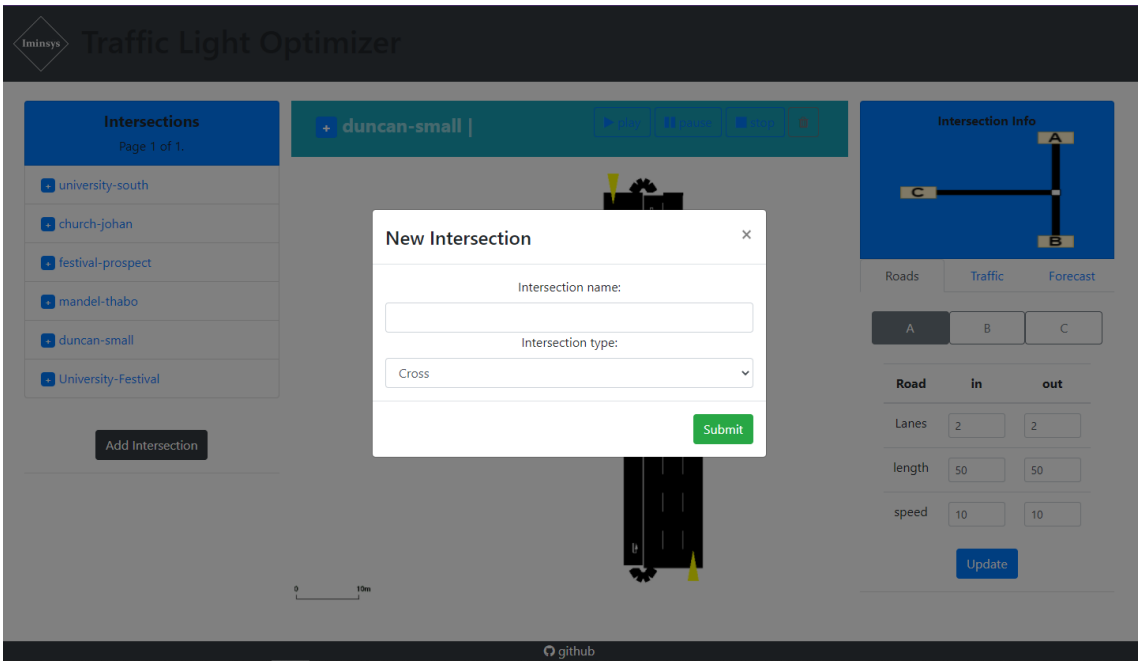

Figure 2.2: Add Intersection

2.3 Intersection Information

2.3.1 Intersection Configuration

(See Figure 2.3) When the user clicks the Road tab. Here, they can:

- (1) Navigate different sides of the intersection.
- (2) View and Update the current intersection configuration.

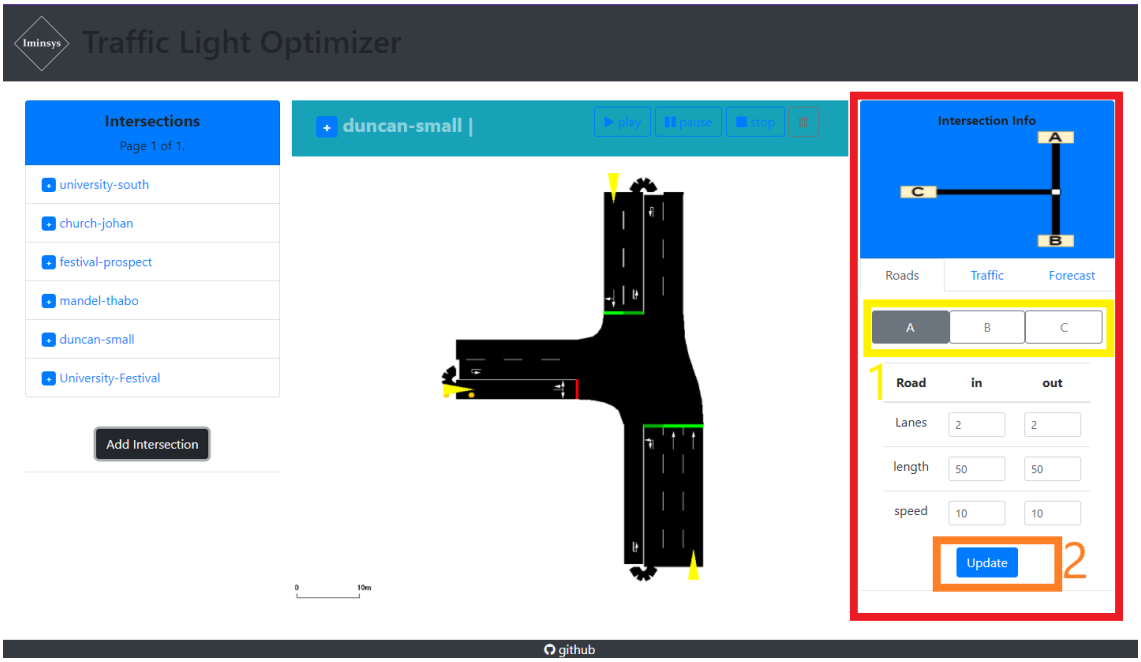

Figure 2.3: Home Page

2.3.2 Traffic Settings

(See Figure 2.4) When the user clicks the Traffic tab. Here, they can:

- (1) View and Update the current intersection configuration.
- (2) View current intersection traffic light timing (See Figure 2.5).

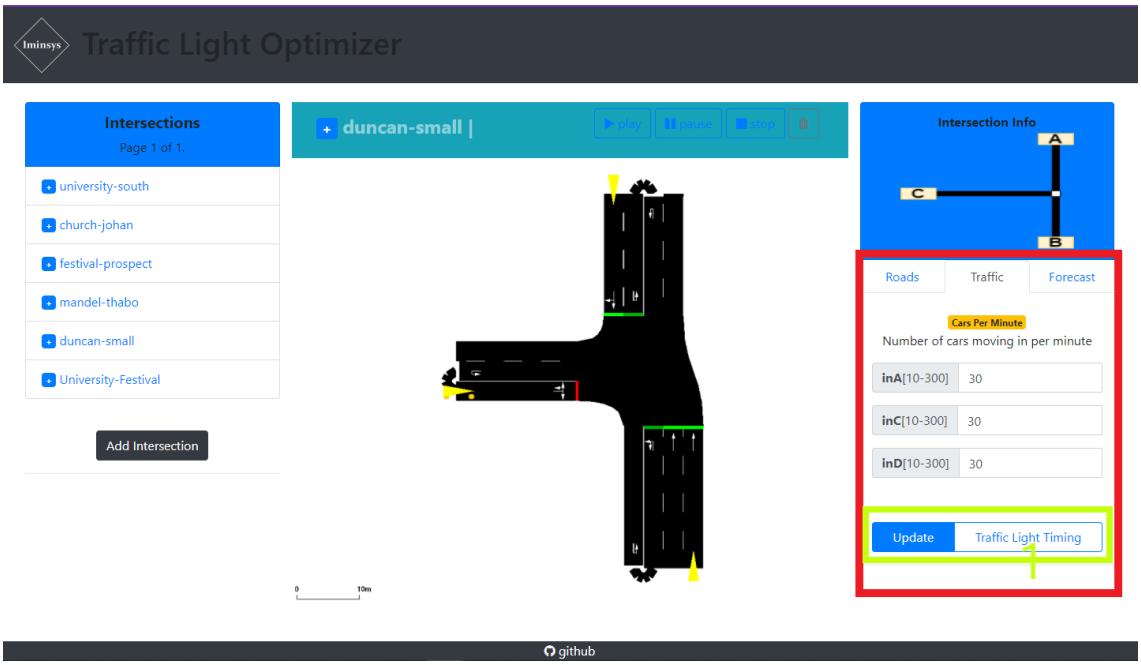

Figure 2.4: Traffic tab

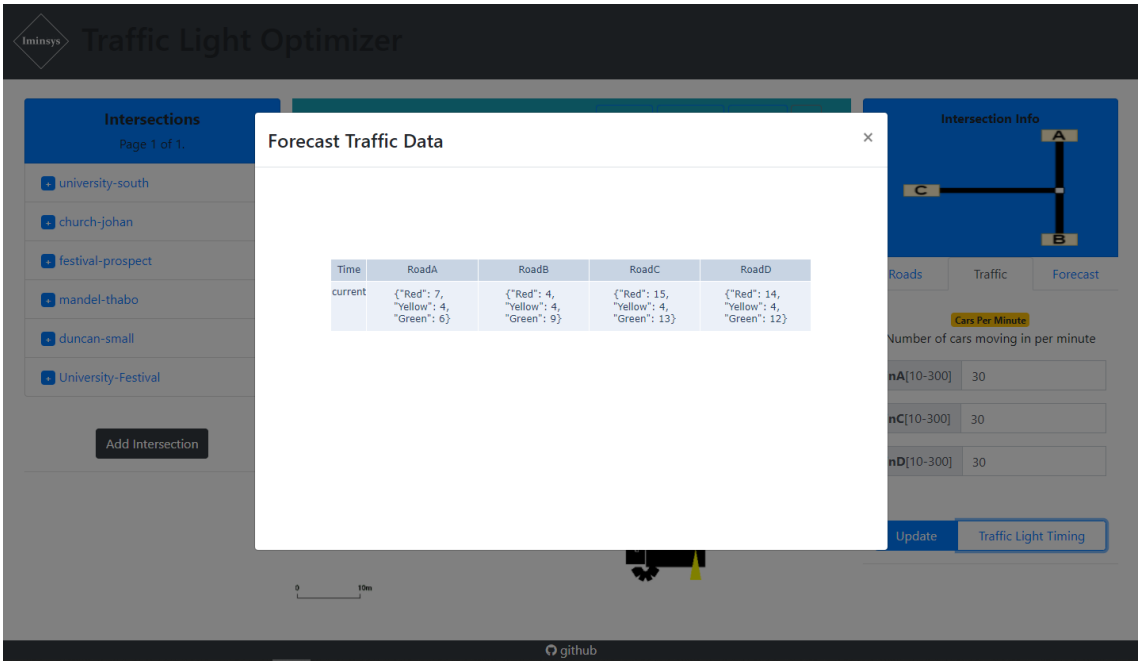

Figure 2.5: Current Traffic lights Timing

2.3.3 Forecast Functions

(See Figure 2.6) When the user clicks the Forecast tab. Here, they can:

- (1) Upload historic time series traffic data in CVS format and view the forecast results (See Figure 2.7).
- (2) View Traffic lights Timing for forested traffic (See Figure 2.8).

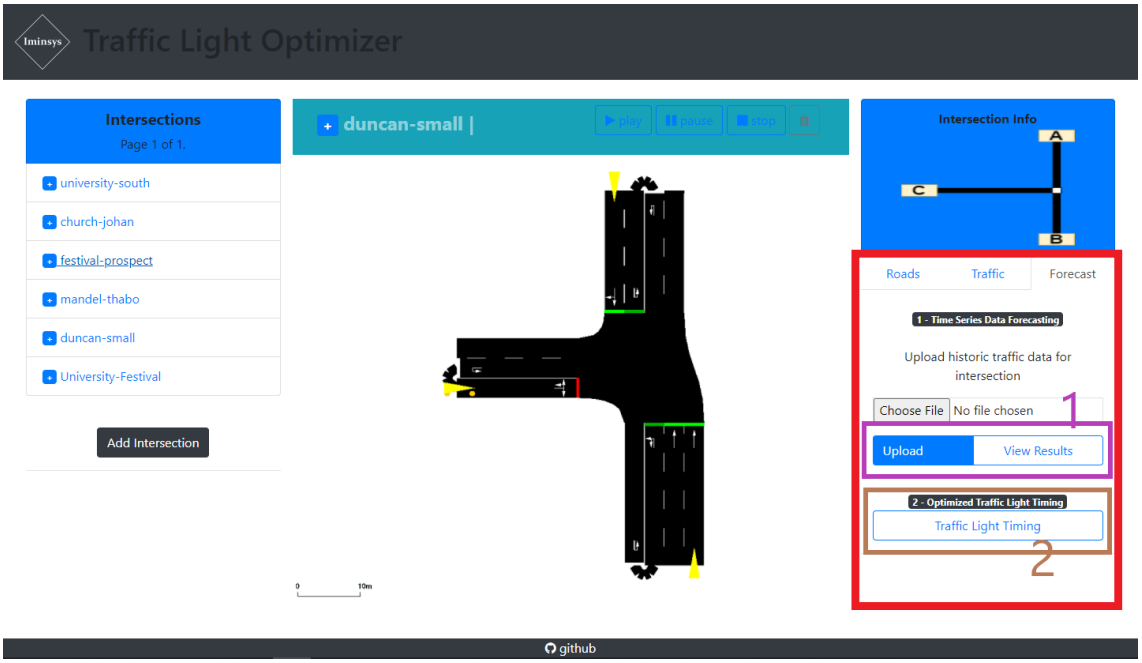

Figure 2.6: Traffic tab

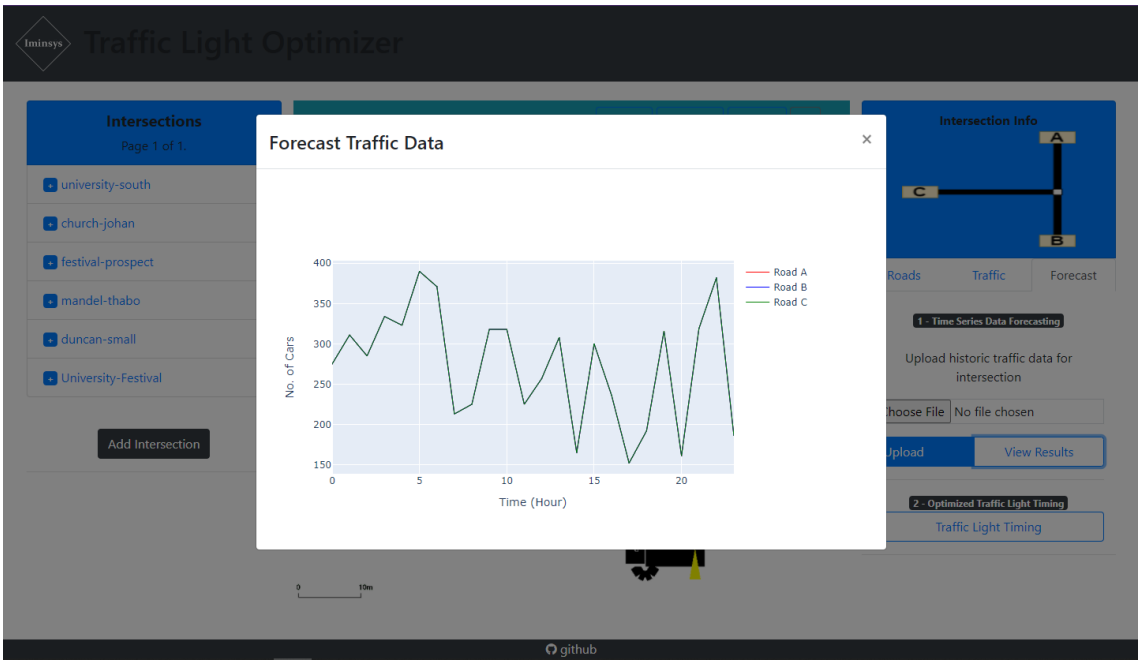

Figure 2.7: Forecast results

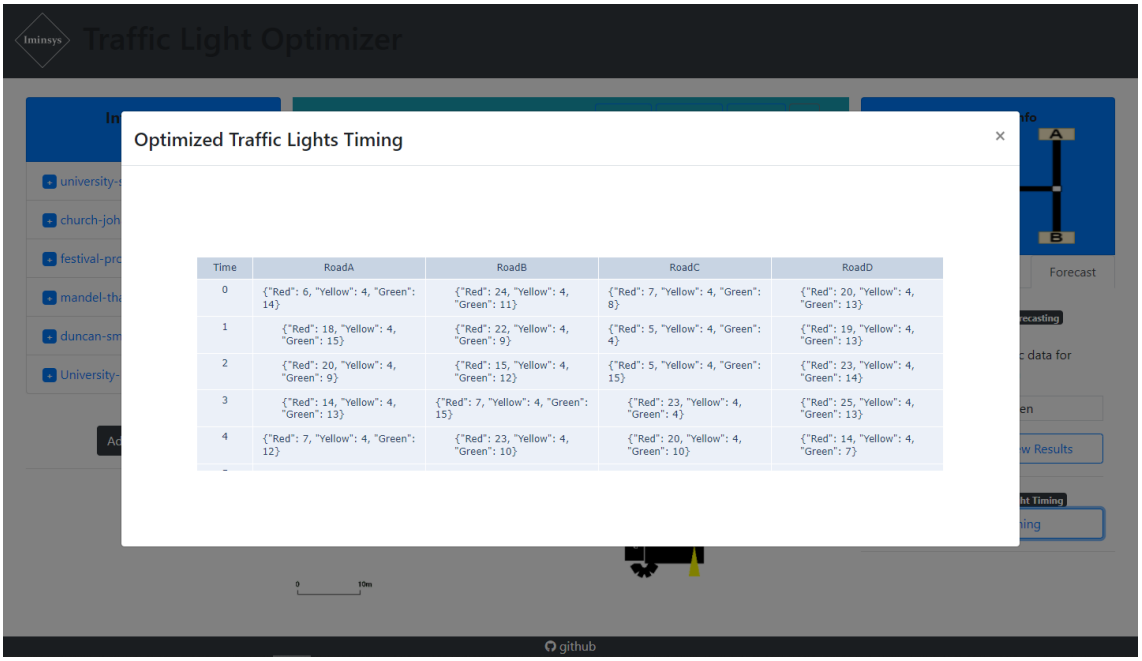

Figure 2.8: Current Traffic lights Timing