

Driver Drowsiness Detection System

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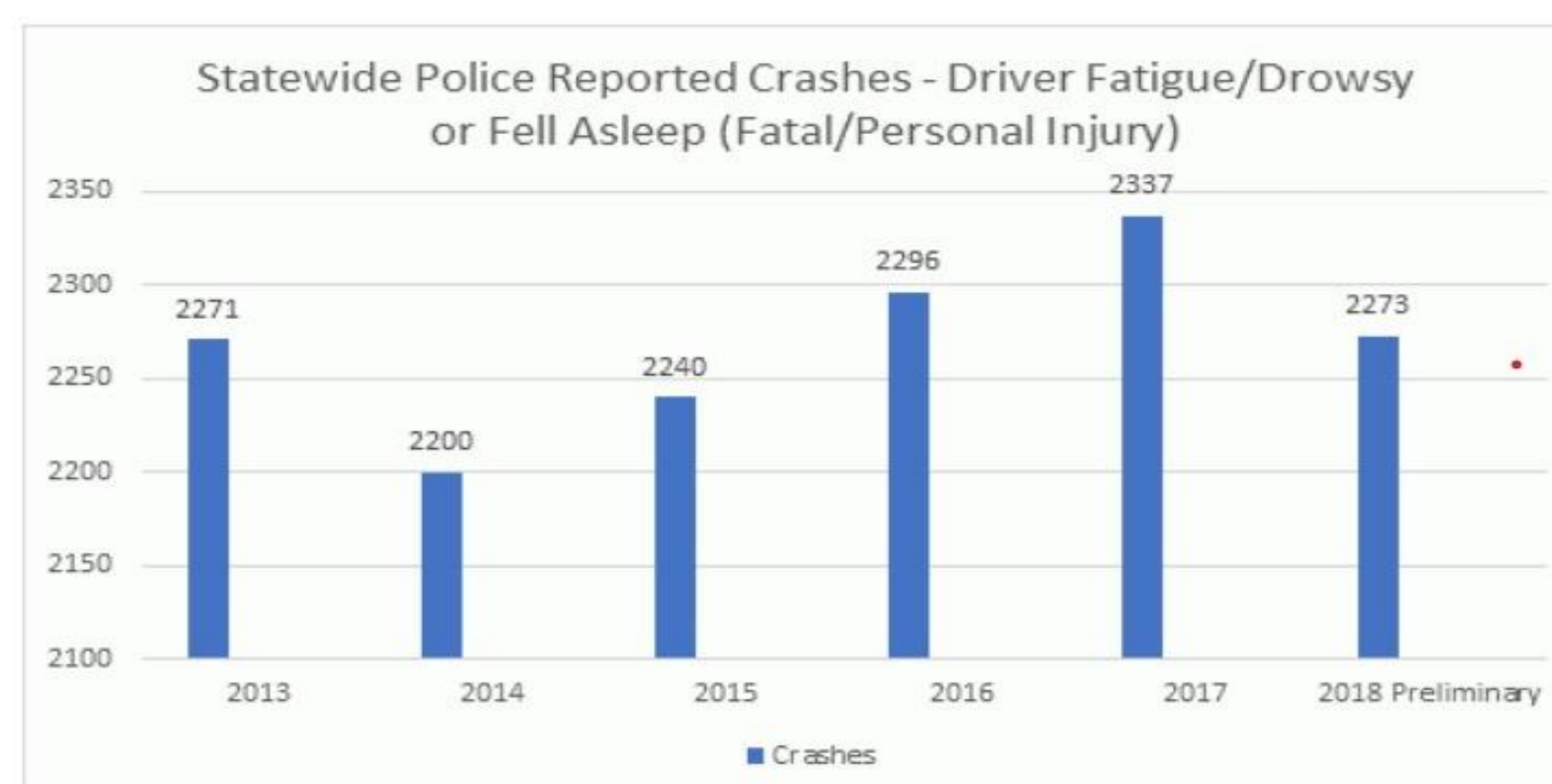
CPG No. 236

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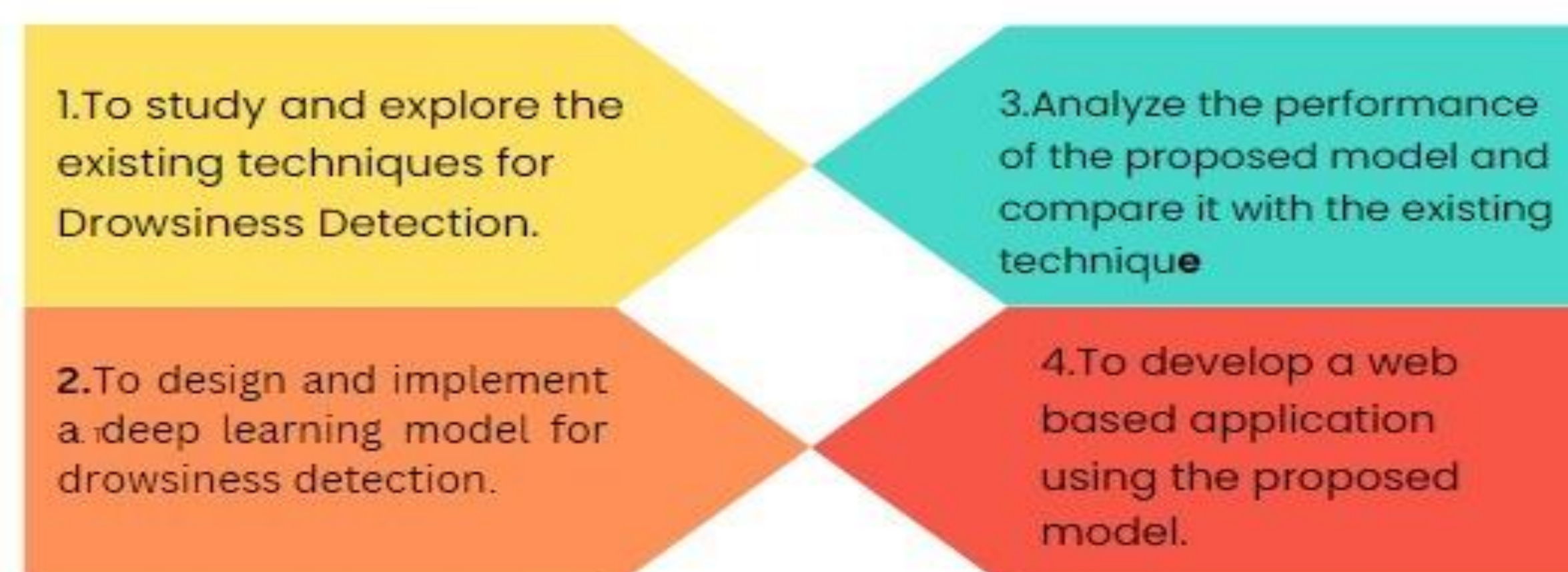
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Introduction

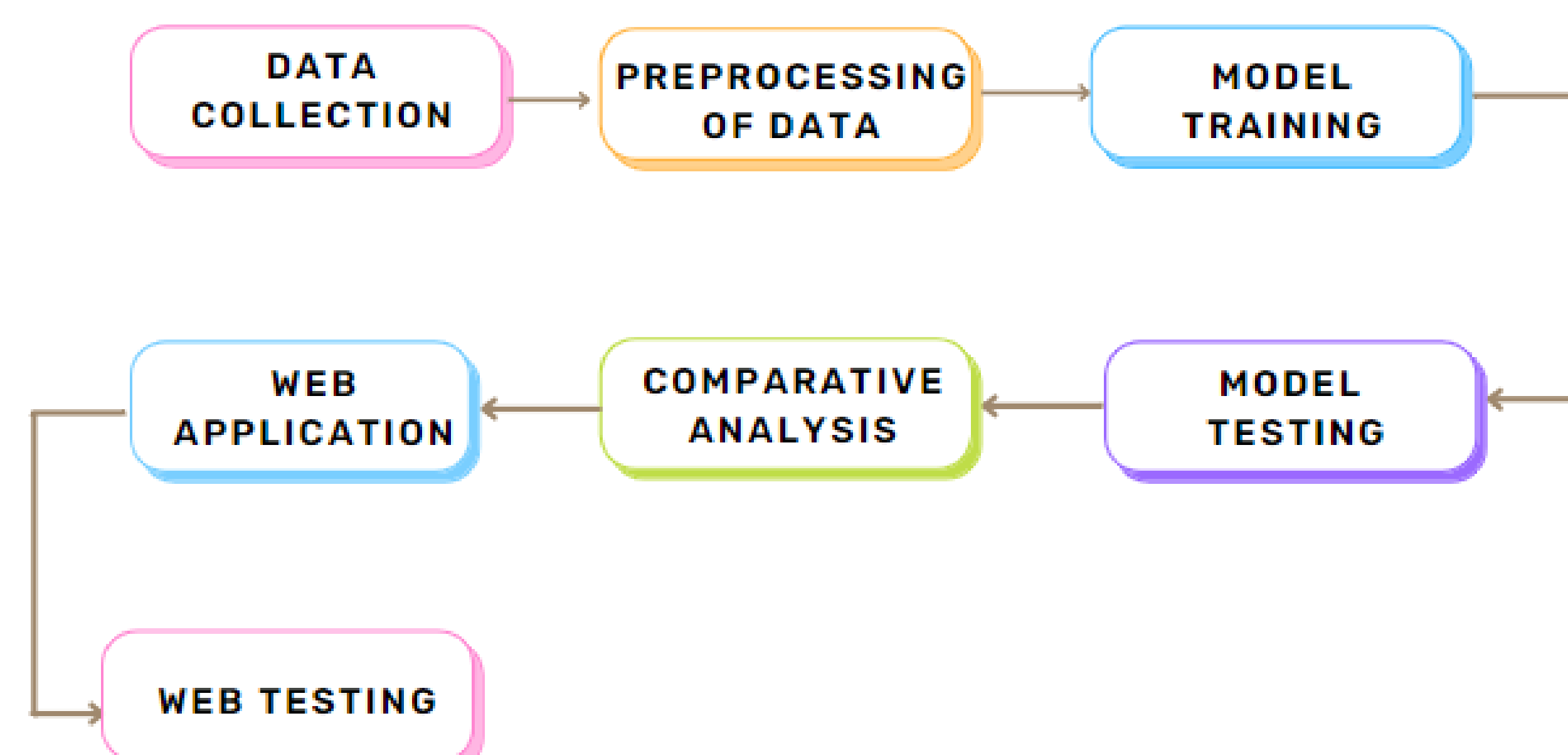
Over the past years, road accident reports analysis says that the main cause of road accidents is the drowsiness of the driver. So, to reduce them we need to come up with an innovative solution. So, our team has decided to make an app that will alarm the driver when he/she will have drowsiness beyond a threshold limit and thus will play a major role in controlling road accidents caused due to the drowsiness of the driver.



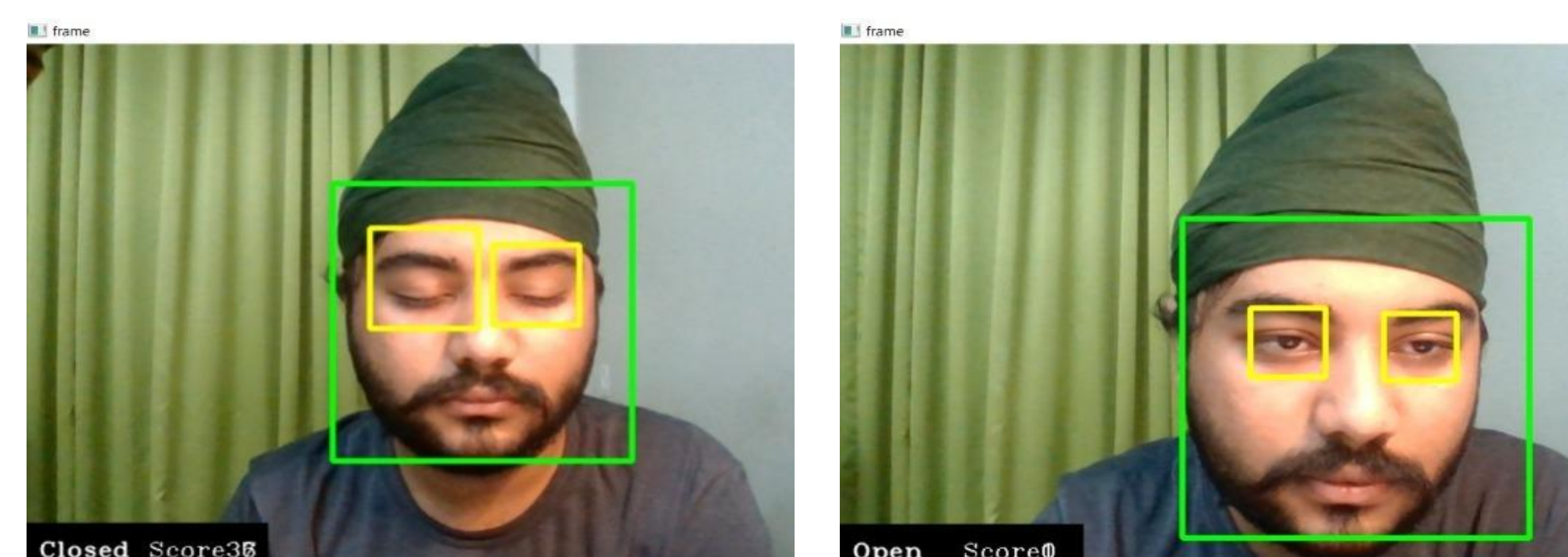
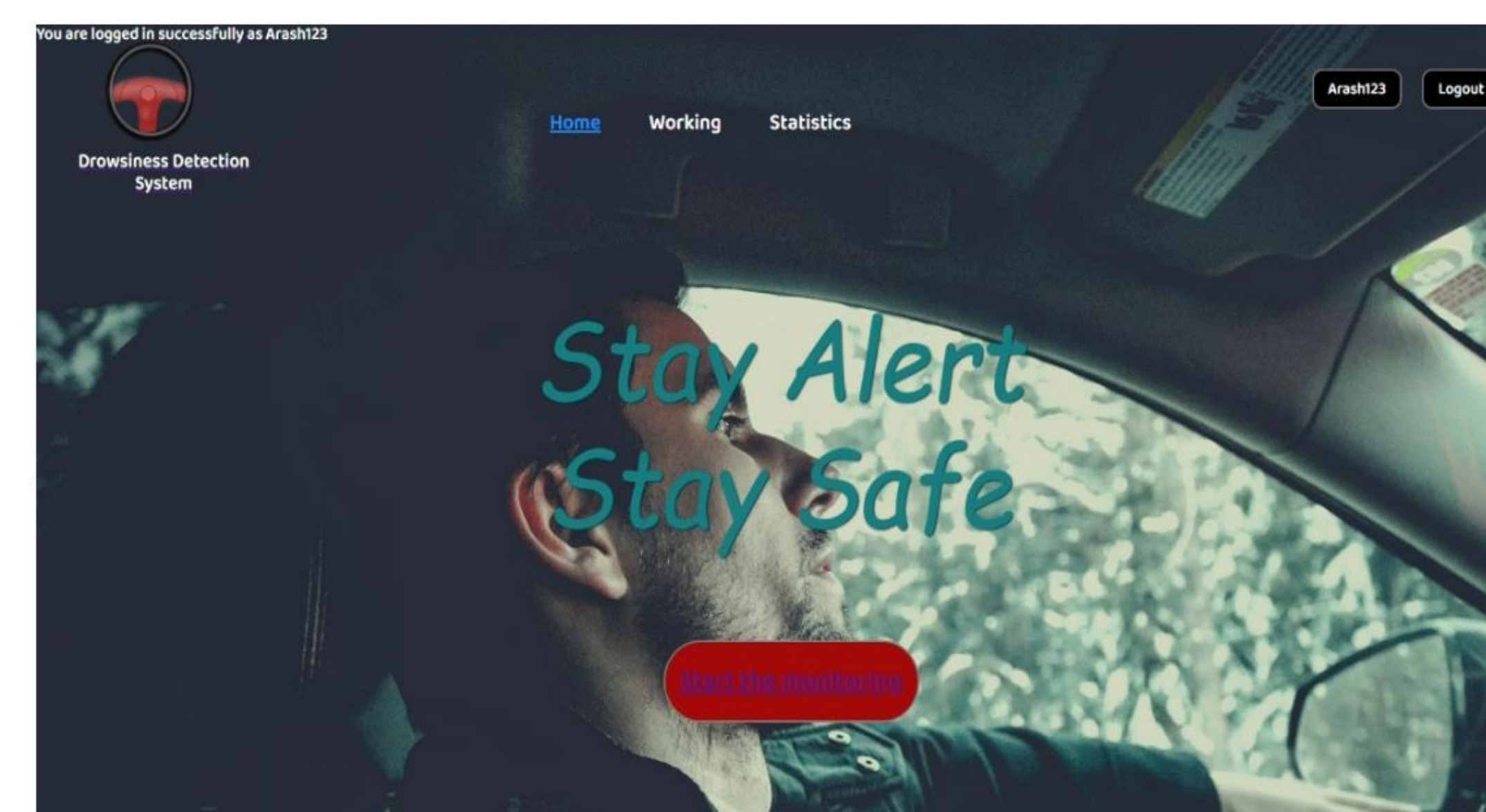
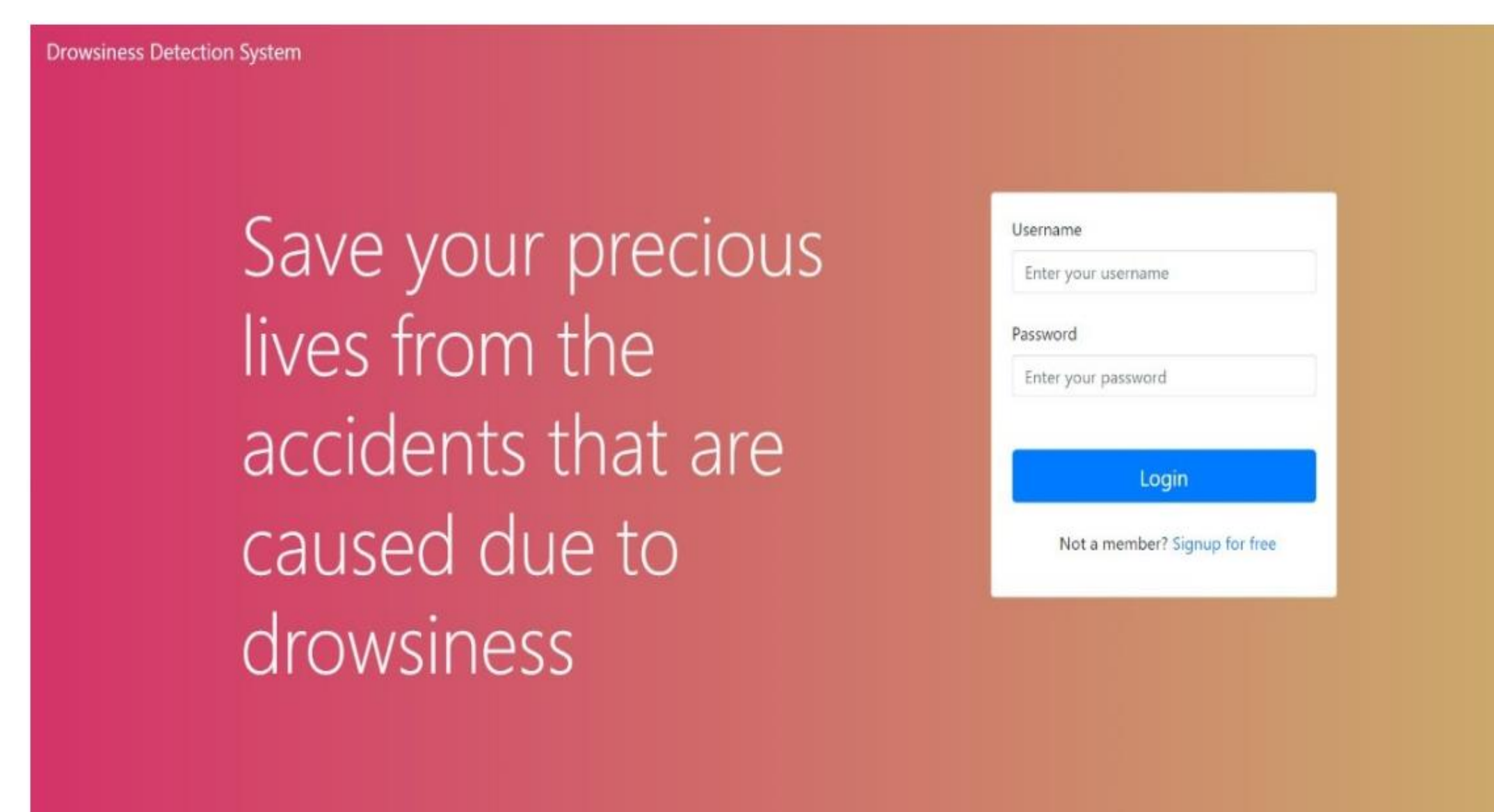
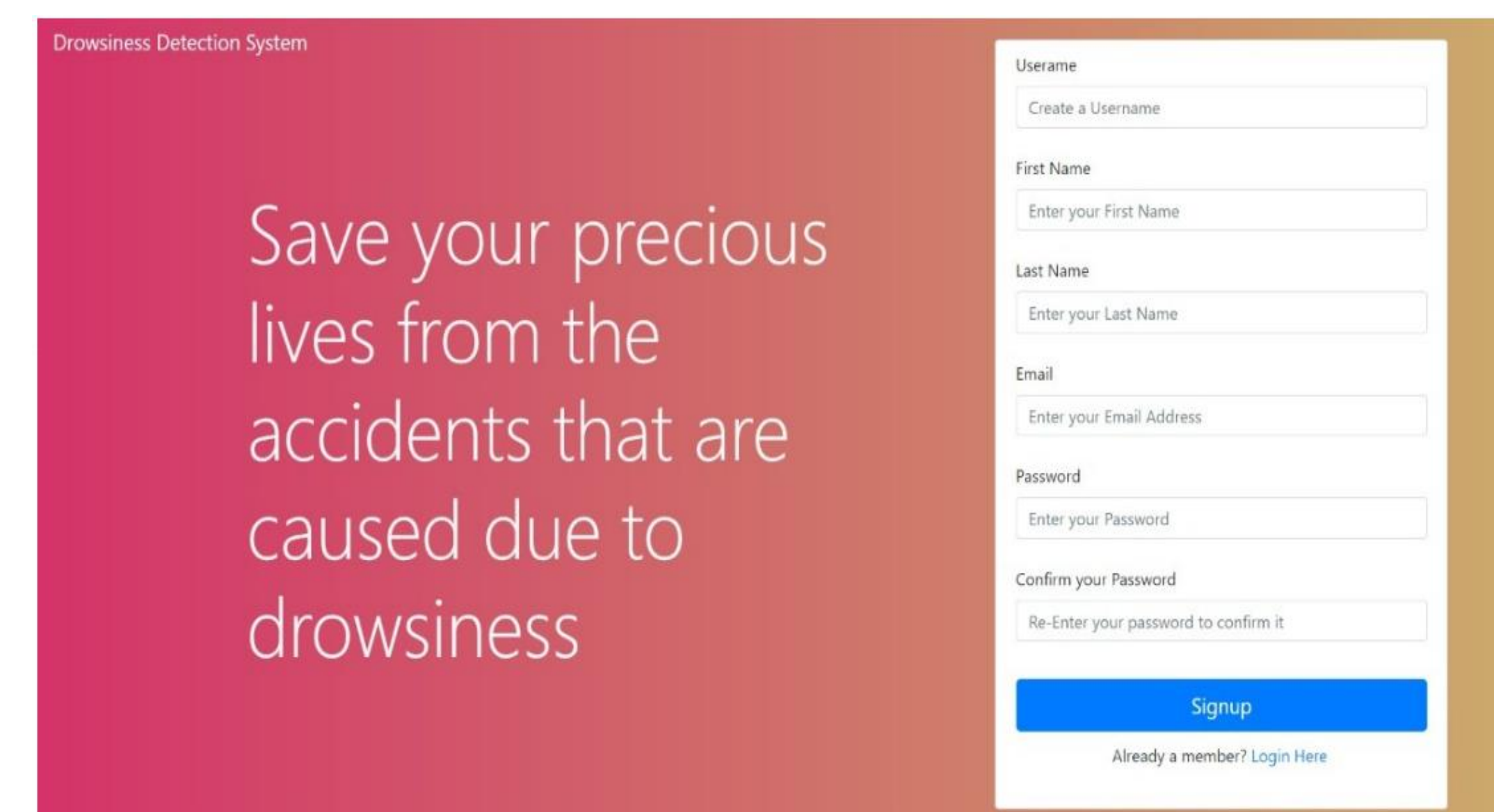
Objectives



Methodology



Images



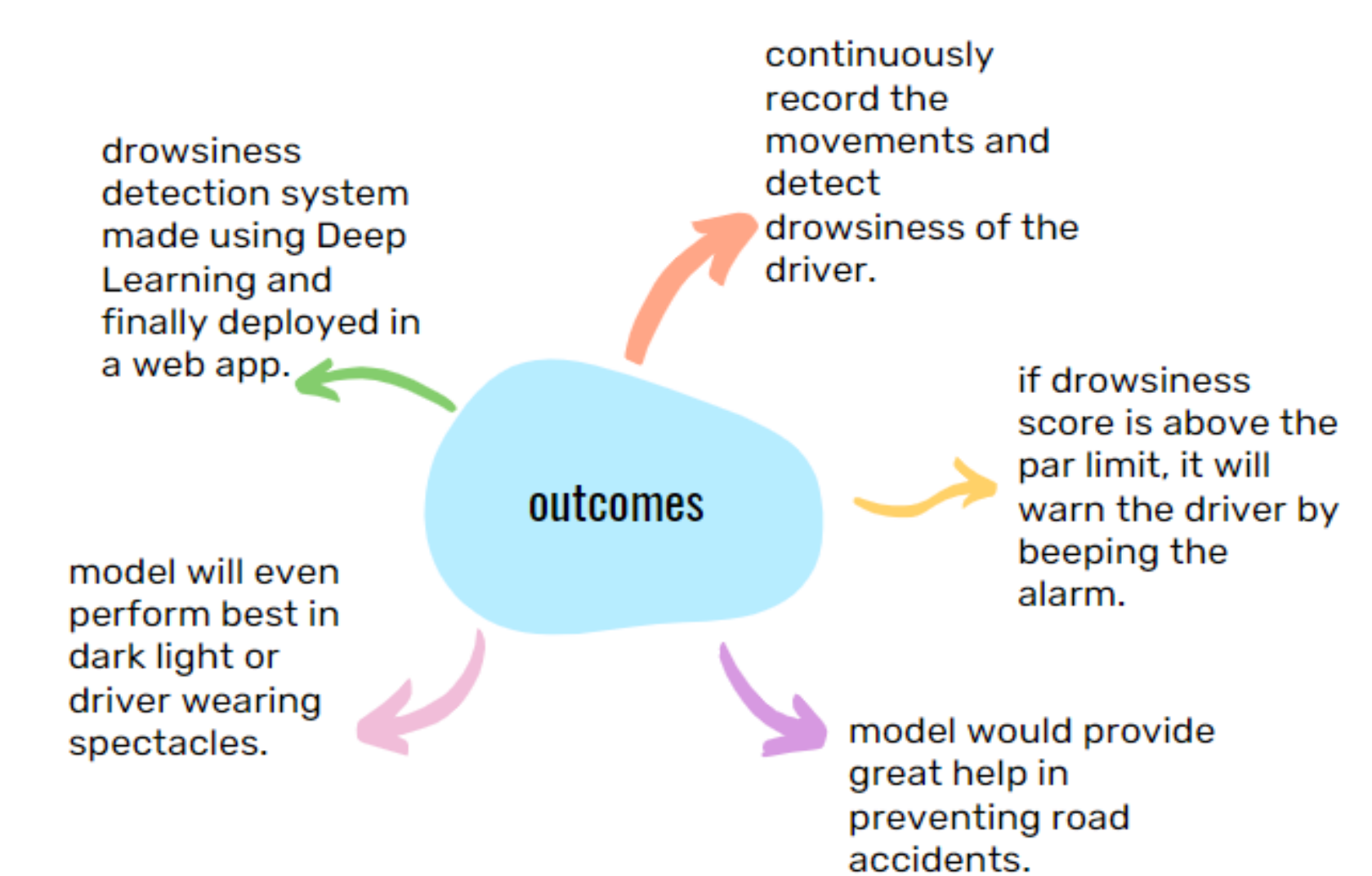
Tools/Technologies

1. Deep Learning
2. Webcam
3. Python
4. HTML/Java-script/CSS
5. Django

Techniques

1. Haar Cascade
2. CNN
3. Inception v3

Project Outcomes



Conclusion

A novel method for detecting driver drowsiness based on the state of the eyes is proposed. This evaluates if the driver is drowsy or not and, if it is, notifies with an alarm. To find the face and eye region, the Viola-Jones detection method is applied. In the learning phase, a stacked deep convolutional neural network is built and used to extract features. CNN classifier is used to determine if the driver is drowsy or not. A buzzer sound has been added in, and the driver will be warned if drowsiness is detected. The suggested system accurately identifies the state of sleepy output when the model predicts it on a regular basis.

Reference

- [1] R. Jabbar, M. Shenoy, M. Kharbeche, K. Al-Khalifa, M. Krichen, and K. Barkaoui, 2020, "Driver Drowsiness Detection Model Using Convolutional Neural Networks Techniques for Android Application," IEEE International Conference on Informatics, IoT, and Enabling Technologies (ICIoT), pp. 237-242.
- [2] K. B. R. Teja and T. K. Kumar, 2021, "Real-Time Smart Drivers Drowsiness Detection Using DNN," 5th International Conference on Trends in Electronics and Informatics (ICOEI), 2021, pp. 1026-1030.
- [3] M. Ramzan, H. U. Khan, S. M. Awan, A. Ismail, M. Ilyas, and A. Mahmood, "A Survey on State-of-the-Art Drowsiness Detection Techniques," in IEEE Access, vol. 7, pp. 61904- 61919, 2019, DOI: 10.1109/ACCESS.2019.2914373.