DRIVER’S BLIND EYE DETECTION

TRISHA U
960521104069
CAPE INSTITUTIONS OF TECHNOLOGY

PROBLEM STATEMENT

Despite advancements in automotive safety, accidents due to driver distraction persist. A key factor is the driver's inability to maintain continuous visual focus on the road. To prevent accidents, there's a critical need for a reliable Driver's Blind Eye Detection System. This system must accurately identify instances where the driver's eyes are diverted from the road due to drowsiness, distraction, or other factors, issuing timely warnings to avert potential accidents.

PROPOSED SYSTEM APPROACH

- System Development Approach:
- Requirements Analysis
- Research and Prototyping
- Hardware Development
- Software Development
- Testing and Validation
- Integration and Deployment
- Iterative Improvement

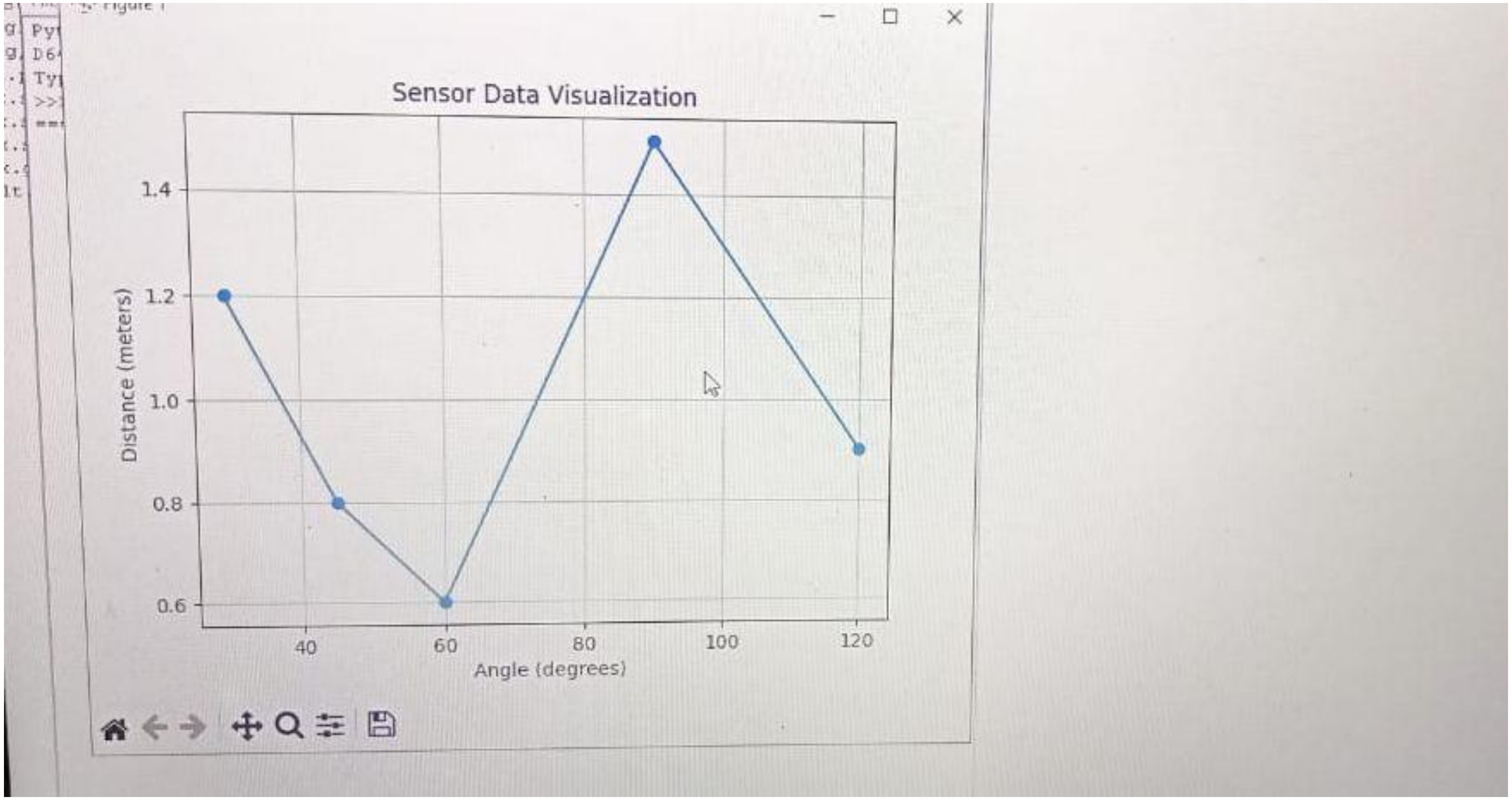
ALGORITHM AND DEPLOYMENT

- Algorithm and Deployment:

- 1. Algorithm Development:
- - Develop eye-tracking algorithms to analyze blink frequency, gaze direction, and pupil dilation.
- - Implement real-time processing for timely detection of driver distraction or drowsiness.
- - Integrate machine learning to differentiate intentional and unintentional eye movements.

- 2. Deployment:
- - Integrate hardware and software components into a cohesive system architecture.
- - Ensure compatibility and seamless integration with existing vehicle safety systems.
- - Deploy the system in vehicles for testing and validation in real-world driving scenarios.

RESULTS


Sensor Data Visualization
Distance (meters)
1.4
1.2
1.0
0.8
0.6
40
60
80
100
120
Angle (degrees)

CONCLUTION

- Conclusion:

- The Driver's Blind Eye Detection System offers a vital solution to mitigate accidents caused by driver distraction. Through innovative hardware and software integration, it accurately tracks eye movements and issues timely alerts, enhancing road safety. Deployment in vehicles for real-world testing validates its effectiveness, marking a significant step towards safer driving experiences.

REFERENCES

Here are the links to install the mentioned Python libraries in the code:

1. [OpenCV](https://pypi.org/project/opencv-python/)

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2. [PyTorch Official Website](https://pytorch.org/get-started/locally/)

3. [Imutils](https://pypi.org/project/imutils/)

4. [Pandas](https://pypi.org/project/pandas/)

5. [NumPy](https://pypi.org/project/numpy/)