**CSE541: - Computer Vision**

**Weekly Report - 3**

**Section Number – 1**

**Group Name: - string the\_boys;**

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**Road sign recognition system**

Task performed during the week:

* Implemented data augmentation techniques such as rotation, scaling, and flipping to increase the size and diversity of the training dataset.
* Fine-tuned the CNN model using the augmented dataset and experimented with different hyperparameters to improve performance.
* Conducted an analysis of the model's false positive and false negative predictions to identify areas for further improvement.
* Investigated the use of transfer learning by using a pre-trained CNN model as a feature extractor for road sign detection.
* Explored the use of ensemble learning by combining multiple CNN models for improved accuracy.

Outcomes of the tasks performed:

* Improved the performance of the CNN model by using data augmentation and fine-tuning with optimized hyperparameters.
* Gained insights into the model's performance through the analysis of false predictions and identified potential areas for further improvement.
* Explored alternative approaches to road sign detection such as transfer learning and ensemble learning.

Tasks to be performed in the upcoming week:

* Investigate the use of object detection algorithms such as YOLO or Faster R-CNN for road sign detection.
* Conduct experiments to compare the performance of the CNN model with alternative approaches.
* Evaluate the computational efficiency and accuracy of the model on a real-time video stream.
* Write up the results and conclusions of the project for presentation.