Tarun Reddy Nerella : Layer 2 Construction and Optimization

He was in charge of developing and optimizing the model's second layer, which was in charge of categorizing the detected signboards into 47 different types. He started with a simple neural network with a sigmoid activation function, then moved on to ResNet, which provided better image-based classification results. He used the prepared dataset to train the model, which included both original images and augmented images generated using computer vision techniques. He used metrics such as training loss and validation loss to monitor the model's performance and performed hyperparameter tuning to improve the model's performance. He also looked into techniques like model assembly and using a different backbone architecture to improve the system's accuracy and efficiency.

Raghvendra Shanthamraju : Data Collection and Dataset Preparation

He was responsible for collecting and preparing the datasets. For the first dataset (LISA), he managed the data acquisition and pre-processing, ensuring it was suitable for training the first layer of the model. For the second dataset, he used web scraping techniques to collect images from various sources, including the <http://www.trafficsign.us/> website, and then applied computer vision techniques such as image transformations, Gaussian blur, salt and pepper noise, and median filters to augment the dataset. He also ensured that the datasets were appropriately labelled and ready for training the models.