TECHFEST 2020-21

RECOGNISIGN

TASK

In this competition, the main goal is to classify traffic signs. The participants must analyze possible techniques to classify the traffic signs (since no dataset is made available) and develop a computer vision model that gives a reasonable accuracy during prediction.

PROBLEM STATEMENT

This competition expects a Team to come with a model capable of detecting and classifying traffic signs. Some types of signs are mentioned at the end of the Problem statement. The Team has to build its own dataset for training the models. There is no restriction on using any kind of data for training the model. There are no restrictions on the dataset size and contents used for training, choice of programming languages, usage of inbuilt packages, and the type of framework used for attempting the task.

The model should be robust enough so that it is capable of performing real-time classification.

JUDGING CRITERIA

Team ranking will be decided based on the highest points, which are calculated as:

For each Team:
Accuracy Score - Each sign will have different score for accuracy and score for a sign will increase exponentially with its accuracy
Fps score - Higher FPS at detection would fetch you more score and FPS above 30 will not increase your score
Score : **Fps Score * Accuracy Score**
Points calculation:(for each sign)
Points for each sign are proportional to (individual team score for one sign) / (sum of scores of all teams)

Total Points : Sum of points for each sign + Readability score

For ensuring uniformity among the teams pertaining to the prediction time, we've set limits on RAM, GPU and FPS as follows:
RAM: 16GB(Max)
GPU: 4 GB (Max)
Minimum FPS: 8

REGISTRATION

The Participants have to register on the official Techfest Website and fill all the necessary details: www.techfest.org -> Competitions -> RecogniSign -> Explore More

SUBMISSION

- The participants need to submit their working code files with details on how to use the functions or weight files (if any, in case of ML-based models) to predict labels of images.
- We would be using our test dataset (**which won't be shared with the teams**) to evaluate the model's accuracy.
- In ML-based models, teams need to share the training dataset and the weight files used for prediction.

The directory structure for submission is as described below. The code should run without any errors in running the main file in the codes directory.

- Submission folder
  - Codes
    - Main.py (or equivalent)
    - (Other Files)
    - Readability of Code includes 200 points
  - Model
    - Weight files
  - Documentation
    - A two-pager describing the model's working, specifications and capabilities. It should also include the direction to run the code.

The submission folder should be uploaded on google drive and the link for te corresponding folder nshould be shared via mail on recognisign@techfest.org with the subject RecogniSign - your team ID (For example - RecogniSign - RS1234). Also, do check the sharing permissions before sharing the link via mail.

IMPORTANT: The documentation should be done properly and the code must be readable, failing to do so can lead to disqualification

TIMELINE

Last date of registration	10 December, 2020
Final Submission	15 December, 2020

TEAM SPECIFICATIONS AND ELIGIBILITY

1. A team may consist of a maximum of 4 participants. Students from different educational institutions can form a team.

2. All students with a valid Student Identity Card of their respected institutes are eligible for competition.

RULES

1. Every team has to register online on the official Techfest website for the competition.
2. A Team ID will be allocated to the team on registration which shall be used for future references.
3. Originality of work is essential and the application will be disqualified, if found otherwise.
4. Decisions of the **Expert Committee/organizers will be final and binding**. Canvassing in any form will lead to disqualification.
5. Note that at any point of time the latest information will be that which is on the website. However, registered participants will be informed through mail about any changes.

IMPORTANT NOTE

Intellectual Property Rights

The IP rights in the content(s) of the submitted entries and related prototype shall be assigned to **organisers of the competition** without any further consideration. They shall have the rights to implement the solution submitted in the entries and prototype on appropriate level.

PRIZES AND CERTIFICATES

1. The Prize money will be awarded to Top 5 Winners via NEFT and will be processed within 30 working days after receiving the Prize Money from Sponsors.
2. E-certificate of Participation will be given to Top 60% teams (except top 3 winners).
3. E-certificate of Excellence will be given to Top 3 teams.

The Winner will have to mail the following information (immediately after the announcement of results) to shubhamgautam@techfest.org
Subject: RecogniSign, team id- your position (example: RecogniSign, RS1234 – 1st position)

Body of mail:

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code

Mandatory Signs or Regulatory Signs

			
Straight Prohibited or No Entry	**One Way Sign**	**One Way Sign**	**Vehicle Prohibited in Both Directions**
			
All Motor Vehicles Prohibited	**Truck Prohibited**	**Bullock Cart Prohibited**	**Tonga Prohibited**
			
Hand Cart Prohibited	**Cycle Prohibited**	**Pedestrians Prohibited**	**Right turn Prohibited**
			
Left Tturn Prohibited	**U-Turn Prohibited**	**Overtaking Prohibited**	**Horn Prohibited**
			
Bullock Cart & Cart Prohibited	**Length Limit**	**Speed Limit**	**Load Limit**
			
Height Limit	**Width Limit**	**Axle Load Limit**	**Restriction Ends Sign**
			
No Parking	**No Stopping or Standing**	**Compulsory Ahead Only**	**Compulsory Keep Left**

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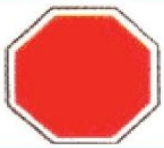
Compulsory Turn Left	Compulsory Turn Right	Compulsory Turn Right Ahead	Compulsory Turn Left Ahead
			
Compulsory Ahead or Turn Left	Compulsory Ahead or Turn Right	Compulsory Cycle Track	Compulsory Sound Horn
			
Stop		Give Way	

Cautionary or Warning or Precautionary Signs

				
Right Hand Curve	Left Hand Curve	Right Hair Pin Bend	Left Hair Pin Bend	Right Reverse Bend
				
Left Reverse Bend	Steep Ascent	Steep Descent	Narrow Road Ahead	Road Wideness Ahead
				
Narrow Bridge	Slippery Road	Loose Gravel	Cycle Crossing	Pedestrian Crossing
				
School Ahead	Men at Work	Cattle	Falling Rocks	Ferry

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Cross Road	Gap in Median	Side Road Right	Side Road Left	Y-Intersection
				
Y-Intersection	Y-Intersection	T-Intersection	Staggered Intersection	Staggered Intersection
				
Major Road Ahead	Major Road Ahead	Roundabout	Dangerous Dip	Hump or Rough Road
				
Barrier Ahead	200 Meters	50-100 Meters	200 Meters	50-100 Meters

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