**CSE 523 Machine Learning Winter 2022**

Progress Report :

**Vehicle Detection using HOG-SVM**

Group Name :

**FOUR**

**Date: 7th February, 2022**

Group Members -

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**1) Tasks Performed in the week**

* Finding various Research Papers and datasets for our Project.
* Being thorough with these papers for finding the best applicable method/algorithm

**2) Outcomes of the tasks performed**

Research paper links:

1. <https://ieeexplore.ieee.org/document/8314922>
2. Zehang Sun, Bebis, G., & Miller, R. (2022). On-road vehicle detection using Gabor filters and support vector machines. *2002 14th International Conference on Digital Signal Processing Proceedings. DSP 2002 (Cat. No.02TH8628)*. <https://doi.org/10.1109/icdsp.2002.1028263>
3. ‌Kumar, G., & Bhatia, P. K. (2014). A Detailed Review of Feature Extraction in Image Processing Systems. *2014 Fourth International Conference on Advanced Computing & Communication Technologies*. <https://doi.org/10.1109/acct.2014.74>
4. Cao, X., Wu, C., Yan, P., & Li, X. (2011). Linear SVM classification using boosting HOG features for vehicle detection in low-altitude airborne videos. 2011 18th IEEE International Conference on Image Processing. <https://doi.org/10.1109/icip.2011.6116132>
5. ‌Dabbaghchian, S., Ghaemmaghami, M. P., & Aghagolzadeh, A. (2010). Feature extraction using discrete cosine transform and discrimination power analysis with a face recognition technology. *Pattern Recognition*, *43*(4), 1431–1440. <https://doi.org/10.1016/j.patcog.2009.11.001>
6. ‌”Reliable feature extraction using Linear Discriminant Analysis”. <https://www.jstage.jst.go.jp/article/softscis/2010/0/2010_0_1233/_pdf>
7. <https://www.acadpubl.eu/jsi/2018-118-18/articles/18d/21.pdf>
8. <https://www.ripublication.com/irph/ijert21/ijertv14n2_10.pdf>

Dataset Links:

1. <https://www.kaggle.com/c/vehicle>
2. <https://www.gti.ssr.upm.es/data/Vehicle_database.html>
3. <http://www.cvlibs.net/datasets/kitti/>
4. <http://ai.stanford.edu/~jkrause/cars/car_dataset.html>

**3) Tasks to be performed in the upcoming week**

* After selecting the best approach, convert the algorithm into pseudocode and further into code.
* Testing the initial stages with the selected data and noting the improvisations can be made.