

LITERATURE

Dataset : The dataset consists of a diverse collection of in-vehicle camera images capturing various distracted driving behaviours, meticulously curated to facilitate the training and evaluation of the proposed model.

Link to dataset :

<https://www.kaggle.com/competitions/state-farm-distracted-driver-detection/data>

Research paper referred :

D. Tran et al

- Tran et al. introduced a distraction detection system utilising various deep learning architectures (VGG-16, GoogleNet, AlexNet, and ResNet). They designed an assisted-driving testbed, collecting a dedicated distracted driving dataset. Real-time experiments on the testbed demonstrated the system's effectiveness, achieving a performance boost compared to baseline results. Notably, their system operates in real-time on a Jetson TX1 embedded board with a frequency range of 8 to 14 Hz and accuracy between 86% and 92%. **Our innovation builds upon this foundation with the integration of ensemble learning, combining predictions from VGG-16, Efficient_net, and Exception models for enhanced accuracy.**

Link to the paper : <https://ietresearch.onlinelibrary.wiley.com/doi/10.1049/iet-its.2018.5172>

Other references :

[1] Y. Xing, C. Lv, H. Wang, D. Cao, and E. Velenis, "An ensemble deep learning approach for driver lane change intention inference," *Transp. Res. C, Emerg. Technol.*, vol. 115, Jun. 2020, Art. no. 102615.

[2] Y. Xing, C. Lv, H. Wang, D. Cao, E. Velenis, and F.-Y. Wang, "Driver activity recognition for intelligent vehicles: A deep learning approach," *IEEE Trans. Veh. Technol.*, vol. 68, no. 6, pp. 5379–5390, Jun. 2019.

[3] P. P. M. Chawan, S. Satardekar, D. Shah, R. Badugu, and A. Pawar, "Distracted driver detection and classification," *J. Eng. Res. Appl.*, vol. 8, no. 4, pp. 60–64, 2018.

[4] B. Baheti, S. Gajre, and S. Talbar, "Detection of distracted driver using convolutional neural network," in *Proc. IEEE/CVF Conf. Comput. Vis. Pattern Recognit. Workshops (CVPRW)*, June. 2018, pp. 1032–1038.

[5] B. Qin, J. Qian, Y. Xin, B. Liu and Y. Dong, "Distracted Driver Detection Based on a CNN With Decreasing Filter Size," in *IEEE Transactions on Intelligent Transportation Systems*, vol. 23, no. 7, pp. 6922–6933, July 2022, doi: 10.1109/TITS.2021.3063521