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| TITLE | YEAR | AUTHOR DETAIL | TECHINIQUE USED | FUTURE ENHANCEMENT |
| Detection of helmets on motorcyclists | 2017 | RomuereR.V.eSilva ,KelsonR,  T.Aires .Rodrigode  M.S.Veras | Helmet detection · Descriptors · Classifiers | Another future study is the detection of passengers on motorcycles. A motorcycle has the capacity to carry a driver and a passenger. The proposed system does not detect more than one helmet in the scene, that is, it does not detect a motorcyclist with a passenger. This functionality can be extended to the detection of more than one passenger, as two or more passengers constitutes a traffic violation. |
| Automatic Helmet Detection on Public Roads | May-16 | Maharsh Desai , Shubham Khandelwal , Lokneesh Singh ,  Prof. Shilpa Gite | *Helmet detection system, fatal, impact, Hough transform descriptor, background subtraction* | In future we intend to use more advanced safety measures like to check alcohol consumption, lane change detection, collision detection, traffic information, e-toll collection, license renewal etc. We also think of applying deep neural network techniques & make transportation more intelligent. |
| Automatic DetectionofBike-riderswithout Helmet using SurveillanceVideosinReal-time |  | KunalDahiya,DineshSingh,C.KrishnaMohan | *Helmet detection system, fatal, impact, Hough transform descriptor, background subtraction* |  |
| A Super-ResolutionReconstructionDrivenHelmet DetectionWorkflow | 2022 | YichengLiu , ZhipengLi , BixiongZhan , JuHan and YanLiu | helmet detection; super-resolution reconstruction; you only look once v5 (YOLOv5) | In the future, we will keep working on identifying a semantic subspace to attempt to remove the influence of image quality on detection performance. |
| Multi-ScaleSafetyHelmetDetectionBasedonSAS-YOLOv3-Tiny | 2021 | Rao Cheng  ,XiaoweiHe,  ZhonglongZhengandZhentaoWang | YOLOv3-tiny; object detection; attentionmechanism; deep learning; intelligent transportation | The next work is to expand the safety helmet dataset based on the dataset in this paper and further improve the detection accuracy while maintaining a lower number of parameters and speed |
| Detecting motorcyclehelmetusewithdeeplearning | 2019 | FelixWilhelmSieberta, HanheLinb | Deep learning, Helmet use detection, Motorcycle, Road safety, Injury prevention | future studies will need to incorporate deeper analysis of position detection accuracy |
| a review on smart helmet for accident detection using IOT | Apr 2020 | H.C. Impana, M. Hamsaveni and H.T. Chethana | Accidents, smart helmet, IOT, Laws and Regulation. |  |
| Helmet Detection using ML & IoT | Dec 2020 | M. V. D. Prasad, S.V.N.P VAMSI KRISHNA, M.SANTOSH KUMAR, P. Sri HARSHA | ***Helmet Detection; Machine Learning; OpenCV; OCR.*** | Our project can be linked with the traffic cameras and with some modifications it can be used to detect helmets in the real time system |
| HELMET DETECTION ON TWO-WHEELER RIDERS USING MACHINE LEARNING | Sep2018 | RAMESH BABU D R, AMANDEEP RATHEE, KRISHNANGINI KALITA, MAHIMA SINGH DEO | Machine Learning, Supervised Learning, Feature Extraction, Background Subtraction, MATLAB Functions | However, for the system to be practical, it needs to recognize multiple vehicles and successfully perform all the tasks as it does in the case of a single vehicle |
| Deep Learning-Based Safety Helmet Detection in Engineering Management Based on Convolutional Neural Networks | May 2020 | Yange Li, Han Wei,Zheng Han , Jianling Huang, and Weidong Wang |  |  |