LITERATURE SURVEY

[1] Reliable Smart Road Signs by Muhammed O. Sayin, Chung-Wei Lin, Eunsuk Kang, Shinichi Shiraishi, and Tamer Basar, Life Fellow, IEEE(2019)

Proposed work: This paper provides a game theoretical adversarial intervention detection mechanism for reliable smart road signs. Under a game theoretical solution concept, we seek to ensure certain measure of guarantees against even the worst case attackers that can perturb the signal even at large scale. We provide a randomized detection strategy based on the distance between the decoder output and the received input.

[2] An IoT Architecture for Assessing Road Safety in Smart Cities by Abd-Elhamid M. Taha Electrical Engineering, Alfaisal University, Riyadh, Saudi Arabia,1 November 2018; Published 19 November 2018.

Proposed work: This paper proposes a Safe System approach to road safety emphasizes safety-by-design through ensuring safe vehicles. We also showcase the use of machine learning in the design of the metric computation core through a novel application of Hidden Markov Models (HMMs). Finally, the impact of the proposed architecture is demonstrated through an application to safety-based route planning.

[3] Smart vehicle connectivity for safety applications by Usha Devi Gandhi; Arun Singh; Arnab Mukherjee; Atul Chandak Published in: 2014 International Conference on Reliability Optimization and Information Technology (ICROIT)

Proposed work: This paper aims at connected vehicle technology aim to solve some of the biggest challenges in the transportation in the areas of safety, one of the main objectives in this project. In this project we focus on V2V communication, once cars are connected which is able to share data with other cars on the road and which help to reduce Highway accidents. VANETS are also considered as one of the most important Simulator for safety of intelligent transportation systems. The use of the DSRC technologies support low latency vehicle-to-vehicle (V2V) Communication.

[4] Automatic road traffic signs detection and recognition using 'You Only Look Once' version 4 (YOLOv4) by W. H. D. Fernando; S. Sotheeswaran, Published in: 2021 International Research Conference on Smart Computing and Systems Engineering (SCSE)

Proposed work: This paper presents an approach to detect traffic signs using You Only Look Once version 4 (YOLOv4) model. The objective of this study addresses road traffic sign detection and recognition using a technique that initially detects the bounding box of a traffic sign. which consisted of manual annotations to identify 43 distinctive traffic signs classes. It was able to achieve an average recognition accuracy of 84.7%.

[5] Improving Road Safety with Intelligent Transportation Systems by Kelly Borden, Marc LaBahn, Matt Milliken, Solomon Ortega, 20 September 2017.

Proposed work: This paper explores a Traffic incidents are one of the leading causes of death worldwide, The goal of our project was to work with the New Mexico Department of Transportation Intelligent Transportation Systems Bureau to propose current and future ITS solutions to decrease fatalities in areas with high crash frequency, or hotspots, in NMDOT Districts 3 and 5. We composed and analyzed a compilation of ITS solutions the NMDOT could potentially utilize in the future to improve traffic safety within the state, as well as recommended specific solutions that would best address the hotspots.