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| **UTC Project Information** | |
| Project Title | MPC-630 – Automated Real-Time Weather Detection System using Artificial Intelligence |
| University | University of Wyoming |
| Principal Investigator | Mohamed Ahmed, Ph.D., P.E. |
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| Funding Source(s) and Amounts Provided (by each agency or organization) | USDOT, Office of the Assistant Secretary for Research and Technology  $45,934  Wyoming Department of Transportation  $116,381 |
| Total Project Cost | $162,315 |
| Agency ID or Contract Number | 69A3551747108 |
| Start and End Dates | August 25, 2020 to July 31, 2022 |
| Brief Description of Research Project | Adverse weather conditions, such as snow, rain, and fog, can directly impact roadway safety, by reducing the visibility and roadway surface friction, negatively affecting vehicles’ and drivers’ performance. In Wyoming, the number of snow-related crashes are particularly significant. Merely in winter 2018, there were 1,438 snow-related crashes, which resulted in fatalities, extended closures, and significant economic loss. Therefore, detection of real-time weather conditions and providing timely Traveler Information Messages to drivers are crucial for safe driving. The state-of-practice of broadcasting road weather information to travelers has been predominantly based on sporadic and expensive Road Weather Information Systems. With consideration of the limitations of the existing weather detection systems, and in view of the opportunity of the emerging video-image processing technologies, this research aims at developing an affordable weather detection system, which will use video images collected primarily by the WYDOT roadside fixed webcams and secondarily by examining the feasibility of extending the algorithms to snow plows trajectory-level cameras. The product of this research will assist WYDOT with providing road users with accurate and reliable road surface weather conditions, resulting in safer travel decisions and more conservative driving behaviors to mitigate the negative impacts of adverse weather on traffic safety. |
| Describe Implementation of Research Outcomes (or why not implemented)  Place Any Photos Here |  |
| Impacts/Benefits of Implementation  (actual, not anticipated) |  |
| Web Links   * Reports * Project Website |  |