**WIPER CONTROL SYSTEM**

**ABSTRACT:**

Windshield wipers play a key role during adverse weather conditions by wiping the rain continuously over the windshield area and provide a clear vision to the driver. The traditional system however requires drivers constant attention for controlling the wiping speed manually. Vehicle windshield wiper system increases the driving safety by contributing a clear shot viewing to the driver. Driving a vehicle is complicated in harsh weather condition without using glass wiper system. Controlling the wiper speed based on the change in weather condition is one of the research area in automotive industries now a day.

**INTRODUCTION:**

A windshield wiper is a very important part that permits a driver to collect the visual information at the time of precipitation of rain from the vehicle components aspect that influences the driver's safety and comfort. The traditional wiper system, requires driver's continuous attention in adjusting the wiper speed and thus implementing the appropriate wiper control system makes it easier to control the wiping action of the wiper motor automatically with the infusion of sensors or camera. Since the manual wiper adjustment distracts driver's attention, which could be a direct cause for traffic accidents, many companies have thus developed automatic wiper system using some of optical sensors with the various levels of success.

**HOW IT WORKS:**

The wiper blades on your windshield are in charge of keeping it clean. They sweep water, snow, wiper fluid, and other liquids or particles off the windshield in a back-and-forth motion. An electric motor drives the wipers on the windshield. The wiper arms are moved by an electric motor connected to a worm gear that provides the necessary force to a long rod. The worm gear can create the force needed to move the wipers at their maximum speed. The arms control the actual wiper blades on the windshield. The rubber blades must provide sufficient pressure to the windscreen to remove all moisture without leaving streaks. Each wiper blade has several arms that join to the centre and equally transfer the pressure onto the windshield. Every car's windshield wipers are essentially the same. They have two pivot points that operate together to remove moisture (one on the driver's side and one in the middle of the windshield).

**OBJECTIVES:**

* To operate the wiper with response to changing rainfall or driving conditions, thus keeping the drivers windshield clear.
* To implement a control system this reduces human effort.
* To achieve high safety by reducing the drivers work load.
* To minimize rates of accident caused by distraction in driving.
* To make the system easy to install.

**ADVANTAGES:**

Windshield wipers are a small part of your car, but they have a big impact on your driving and overall safety. They remove rain, snow, dirt, pollen, frost and other debris quickly and smoothly at the push of a button. The windshield wiper motor moves the windshield wiper arms across the windshield. The metal or hard plastic arms drag a thin rubber (or silicone) blade across the windshield to clear away water, giving you a better view of the road.Over time, windshield wiper blades crack, tear and lose their flexibility and functionality.

**CONCLUSION:**

An windshield wiper control system is virtually analysed in software environment to detect rain and actuate the windshield wiper based on the intensity of rain. the design and development of prototype process will be carried out as a task to test the control system in real time as a HIL (Hardware in the Loop) model.