

## **ABSTRACT**

Accidents often occur right now, but the most dominating case is collisions on motorcycle. Cases of accidents are generally caused by mechanical problems or the lack of focus of the driver in driving a vehicle. Features are still being developed in motor vehicles to be able to improve safety in driving.

And so a system is required on a vehicle that has a function to avoid collisions on motorcycle with the object in the front of it. The detection of distance and speed between motorcycles with their objects. will be used ultrasonic sensors as a parameter of distance, the hall effect to measure the speed of motorcycles. Determine of the output value is processed using logic fuzzy method they will process microcontrollers. From the results of this system it is expected that the creation of a safety system for riders to reduce the chance of accidental of collision on motor vehicles.

At this final task, it gained braking success without crashing the object in front of it with an average speed of 10-15 km/hour and the distance maximal of the 6 m object, and stop of 1 m behind the object with 100% precision. Braking begins working from 3 m to the object and performs a linear braking, getting the braking slowly when this automatic brake is working.

Keywords: Electric motorcycle, Brake Control System, Microcontroller, and Fuzzy Logic.