

## **ABSTRACT**

Autonomous vehicles have the potential to take over conventional vehicles and public vehicles. Autonomous vehicles have many advantages such as reducing congestion and reducing the use of fleet vehicles. Autonomous vehicles can be used in ride-sharing and also help with the problems mentioned earlier. In this research we compare the performance of the A\* and Dijkstra algorithms in autonomous vehicle simulations, especially in the context of ride-sharing. We investigate which algorithm is best to be implemented into ride-sharing autonomous vehicles using a simulation approach that is run in the Godot game engine. The result of this simulation shows that the A\* algorithm has a better processing time and memory usage while Dijkstra has the faster completion time.

Keywords—a\* algorithm, autonomous vehicle, dijkstra algorithm, godot, ride-sharing