Introduction

# Problem Background

Autonomous vehicles have been a staple in science fiction movies and a popular topic of discussion in media over the past few decades. Recently, various major corporations have made announcements regarding plans on moving in this direction. With the advancements in technology in the recent years autonomous vehicles operating on the streets have become a very realistic scenario.

There has been much speculation around the idea of autonomous cars since the introduction of the concept, but the expected benefits have always been promising. Advocates predict safer travel, reduced accidents, reduced traffic. However, coming up with a fully-functional and reliable autonomous vehicle has proven to be a challenging task. Numerous major companies such as Tesla, Google and many more have been working in this field for years, but a completely autonomous vehicle is still not available on the market.

# The introduction of autonomous cars has tremendous potential benefits, but it would also introduce new risks such as cyberterrorism, system failures or rebound effects (increased vehicle travel resulting from faster and cheaper travel) [1]. These factors must be considered while designing an autonomous vehicle.

This project is part of a multi-year project which aims to develop a simulated autonomous vehicle in a virtual environment. The main purpose of this project is to investigate existing environments to test autonomous vehicles and eventually propose a final candidate that is the most appropriate environment for the purpose of this project and can be worked on by students in the future. The second part of the project is to demo an autonomous car in the chosen environment, by building a decision-making program for the car that exists in the proposed environment.

# Problem Motivation

# Problem Statement

# Proposed Solution

# Overview of Remainder of Report

Technical Sections

# Background and Terminology

# Project Details