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Our project aims to answer the millions of crashes that still occur today due to distractions and dangerous objects while driving. As of today, there is research and companies that utilize cameras and sensors on vehicles to detect collisions and dangers. We will use computer vision to detect objects, road signs, and machine learning to analyze dangerous driving patterns. We will utilize our technical knowledge to develop an application and device that will be used to monitor driving conditions in any vehicle. We plan to use a small device such as a Raspberry PI and camera attachment to give us live camera feed data of the vehicle. Once we retrieve the data, we then will process it and illustrate to the user obstacles, road signs, and warnings that may occur.

Throughout my college career, I have learned a diverse set of technical and professional knowledge. I was able to learn specifically about computer vision and machine learning through courses I took abroad in France. I was able to get practical experience through a project that required the use of creating an application to detect objects using Java and OpenCV. I was able to understand the curriculum due to my previous technical knowledge and use of programming languages through Software Engineering courses. There have been many fundamental courses that allowed me to learn more about my interests today. I was able to develop many professional skills that allowed me to get the France opportunity as well.

My co-op and internship experiences intertwine with my degree in which I have a diverse set of technical and professional skills. I have worked on many different projects and roles ranging from data analyst to full-stack developer during my previous internships. I like to challenge myself and find projects that expand my technical knowledge and professional skills. I have been able to develop these skills through my co-op experiences at Microsoft, Fifth Third Bank and the research internship in France called UrbanLoop. I enjoyed learning from incredibly smart people and their perspectives on how to bring my knowledge to be used in an industry manner. I believe that all my internship experiences will benefit me greatly in successfully leading and developing our project.

I am extremely interested in this project as it deals with a revolutionary technology that can impact millions to billions of people worldwide. Computer vision and machine learning can solve many problems in today's fields of healthcare, transportation, and many others. I believe technology today should not be limited for only people who can afford it. The vehicle aid assistance that we plan to develop would be available to anyone to use in their conventional vehicles. It will allow drivers to rest assured that there are a detection and awareness in their smart device. I believe it is important for us to learn about these technologies along with the data that is available for us to utilize and create highly efficient models.

Our approach to solving this will be based on a learning structure and verification. We will begin with validating and processing images and videos of objects, road signs, and dangerous conditions on the roadway to aid the driver. Detection and validation will allow us to create reliable models for which we can use in our AI-enabled device. We will then utilize the raspberry PI and camera system to capture live feed. Once verification and system design are

suitable for vehicles then we can test our product. I believe if we are able to satisfiable detect dangerous objects and distractions that could cause a crash, this would justify our project and success.