

Title: Study Robustness and Failure cases in Autonomous Vehicles

Goal: Asses the robustness improvements of deep learning models used in Autonomous Vehicles with the usage of our lab's in-house training algorithms.

Project Description: In this project, you will be at the forefront of the evolving field of autonomous vehicles (AVs), tasked with creating a specialized laboratory for robustness analysis of AV systems. Your journey will be marked by gaining expertise in assessing and enhancing the resilience of AVs, working with open-source deep learning tools, and deploying large-scale computer vision models.

What You Will Learn:

1. **Autonomous Vehicle Technology:** You will develop a deep understanding of the intricate workings of autonomous vehicles, with a focus on their perception systems and sensor fusion.
2. **Robustness Analysis:** Your primary focus will be on methodologies for assessing and improving the robustness of AVs. This will include identifying vulnerabilities, devising robustness tests, and analyzing system performance under diverse conditions.
3. **Deployment of Large Computer Vision Models:** You will acquire hands-on experience in deploying and fine-tuning large-scale computer vision models tailored for autonomous vehicles. This skill is critical for enhancing AVs' perception capabilities, making them more reliable and safe.

Through this project, you will emerge with a profound understanding of the challenges faced by autonomous vehicles in real-world scenarios and the tools and techniques necessary to address these challenges effectively. Your contributions will be instrumental in advancing the robustness and safety of AV systems.

