



HOKIE ELECTRIC VEHICLE TEAM



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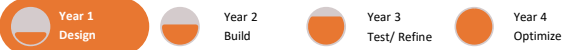
HEVT Project Overview

EcoCAR EV Challenge

Redesign the drivetrain of a 2023 Cadillac LYRIQ, adding connectivity and automation

Objectives

Engineer a next generation battery electric vehicle (BEV) that utilizes automation and vehicle-to-everything (V2X) connectivity to implement energy efficient customer-pleasing features, and meet the decarbonization needs of the automotive industry

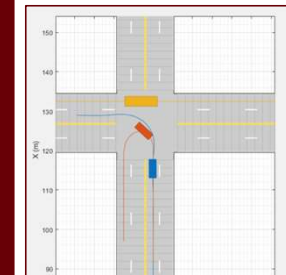


Propulsion Test Bench

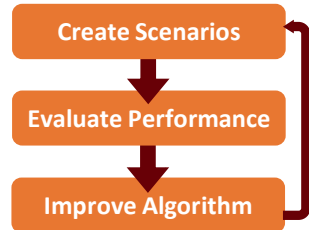


Fully integrated EV Powertrain

Sensor Fusion Algorithm



Driving Scenario Designer



Year 1 Objective



Design

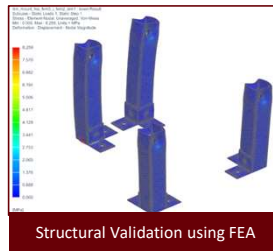
Validate



Knowledge

Contribute the design and validation of a propulsion test bench and sensor fusion algorithm to the future of HEVT

Validation



Structural Validation using FEA

Thermal System Validation

Validation Metrics

MIO Assignment Error

Accuracy of identifying the vehicle traveling closest to the ego vehicle in the same lane

Lateral Error

Lateral offset distance between fused tracks and ground truth data

No. of Fused Sensors

Total number of sensors fused to achieve full track fusion for our algorithm

Longitudinal Error

Longitudinal offset distance between fused tracks and ground truth data