From Students…
…to Professionals

Beta Presentation
Automotive Software Integration in Virtual 3D

The Capstone Experience

Team Elektrobit
Dutton, Brandon
Wojan, Tommy
Kania, Logan
Austin, Joshua
Fierro, Alan
Le, Duy

Department of Computer Science and Engineering
Michigan State University

Spring 2024
Project Overview

• Proof of concept for HPC Dev-kit
  ▪ Simple, secure, low-latency communication
• Pull data from CARLA sensors to the frontend
  ▪ Data passes through two HPC Dev-kit containers
• Target audience is other engineers
  ▪ Backend logic is far more important than the UI
System Architecture

Ubuntu Linux Server

Adaptive AUTOSAR Container

Data Processing App

Adaptive AUTOSAR Container

Communication Interface

User Interface

End User

Socket Request

Socket Request

Control

Sensor Data

Visualized Data

API Request

Data

HTTP

CARLA Interface

CARLA
Main Dashboard UI
Idle Collision Detector
Lane Departure and Collision Detected
High G-Force During Frontal Collision
What’s left to do?

• Other Tasks
  ▪ Code cleaning
  ▪ Bug fixes
  ▪ Create a white paper

• Stretch Goals
  ▪ Add Weather UI
  ▪ Integrate driving wheels for CARLA
Questions?