### Background
- Mozee’s goal is to revolutionize the transportation scene by creating safe, environmentally friendly, and fully autonomous “bus” rides.
- In order to prioritize safety of the passengers, there is a need to monitor activities within and outside of all the vehicles.
- Our goal is to provide Mozee with a way to track and monitor what goes on in the interior of their vehicles. To do this we are taking video and acquiring demographic information about our passengers for the purpose of improving user experience and improving marketing strategies.

### Hardware and Software
- Chose Jetson Nano for computation power, enabling multiple camera usage and image/video processing.
- Opted for high-quality cameras for flexibility in post-processing after capturing.
- Hardware choice ensures future scalability for additional cameras and performance-intensive processing.
- Facial detection using YOLO V8 identifies and crops passengers' faces for further analysis.
- Cropped facial data is processed through dedicated CNNs for precise age and gender classification.

### Ethics
- Balance safety and privacy concerns, ensuring passenger rights.
- Monitor interior of vehicle to ensure passenger safety.
- Obtain explicit consent for personal data collection.
- Secure and anonymize data to prevent unauthorized access and prevent bias and discrimination in demographic data use.

### Dashboard

![Dashboard Diagram]

- **Overview**
- **On-going Rides**
- **Sales Today**

### Diagram of PassengerSense Process

![Diagram of PassengerSense Process]

1. **Camera for face detection**
   - Images

2. **Camera to record vehicle interior**
   - Video
   - User data

3. **Jetson Nano**
   - Images
   - YOLO V8

4. **YOLO Face detection**
   - Images
   - Demographic information

5. **Hard drive**
   - Images, video, and demographic information
   - Images and video
   - 5 TB

6. **Face detection camera**
   - PIR Sensor

7. **Interior monitoring camera**

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