AV-Multi Road User Conflict Scenario eHMI Design Evaluation Simulator

Setup Guide

Introduction

This document provides instructions to set up and run the AV-Multi Road User Conflict Scenario eHMI Design Evaluation Simulator for the Windows environment. The system supports OpenXR-compatible VR headsets, such as Oculus and HTC Vive.

System Requirements

Hardware Requirements:

- Minimum: Intel Core i5, 8 GB RAM, NVIDIA GTX 1060 or equivalent
- Recommended: Intel Core i7, 16 GB RAM, NVIDIA RTX 2060 or equivalent

Software Requirements:

- Unity 2021.3.14f1 runtime
- Windows 10 or later
- .NET Framework 4.7.2 or higher
- OpenXR Runtime (if using a VR HMD)

Installation Instructions

1. Download the appropriate build files from the provided repository:
   - Server.exe
   - Pedestrian.exe
   - Cyclist.exe
   - Driver.exe

2. Start the server executable (Server.exe).

3. Run the respective client executable (e.g., Pedestrian.exe) and connect to the server by entering the IP address.
4. Follow the on-screen instructions to proceed with the simulation.

Recommended External Devices

For the best experience, the following devices are recommended:

- HTC Vive Pro Eye HMD
- Deuter Trainer Cycle Roller
- Elite Sterzo Smart
- Atomic A3 2-DOF Simulator
- Logitech G920 Steering Wheel
- Hi5 VR Gloves

Safety Guidelines

1. Ensure the play area is clear of obstacles to avoid accidents during VR usage.
2. Take regular breaks to prevent discomfort or motion sickness.
3. Adjust the VR headset properly for a clear view and avoid strain.
4. Make sure all external devices are securely connected before starting the simulation.

Troubleshooting

- Issue: Client cannot connect to the server.
  Solution: Verify the IP address, ensure the server is running, and confirm that all devices are connected to the same Wi-Fi network.

- Issue: VR headset not detected.
  Solution: Confirm that the headset is properly connected and OpenXR Runtime is active.

- Issue: Poor performance or lag.
  Solution: Lower graphical settings or use a system meeting the recommended requirements.