



Beta Presentation

Training Simulator Using GPS-Indexed Video

The Capstone Experience

Team Union Pacific

Mohamed Ahmed

Tre Benson

Melinda Fadool

Ravi Gangaiahnadoddi Kumar

Nico Roberts

Abigail Werden

Department of Computer Science and Engineering
Michigan State University

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*From Students...
...to Professionals*

Project Overview

- Train locomotive engineers with real-world video, helping them gain familiarity with the area
- Overlay weather, signage, messages, warnings, and score
- Simulate training scenarios using set routes

Team Member's Technical Tasks

Technical Tasks Assigned

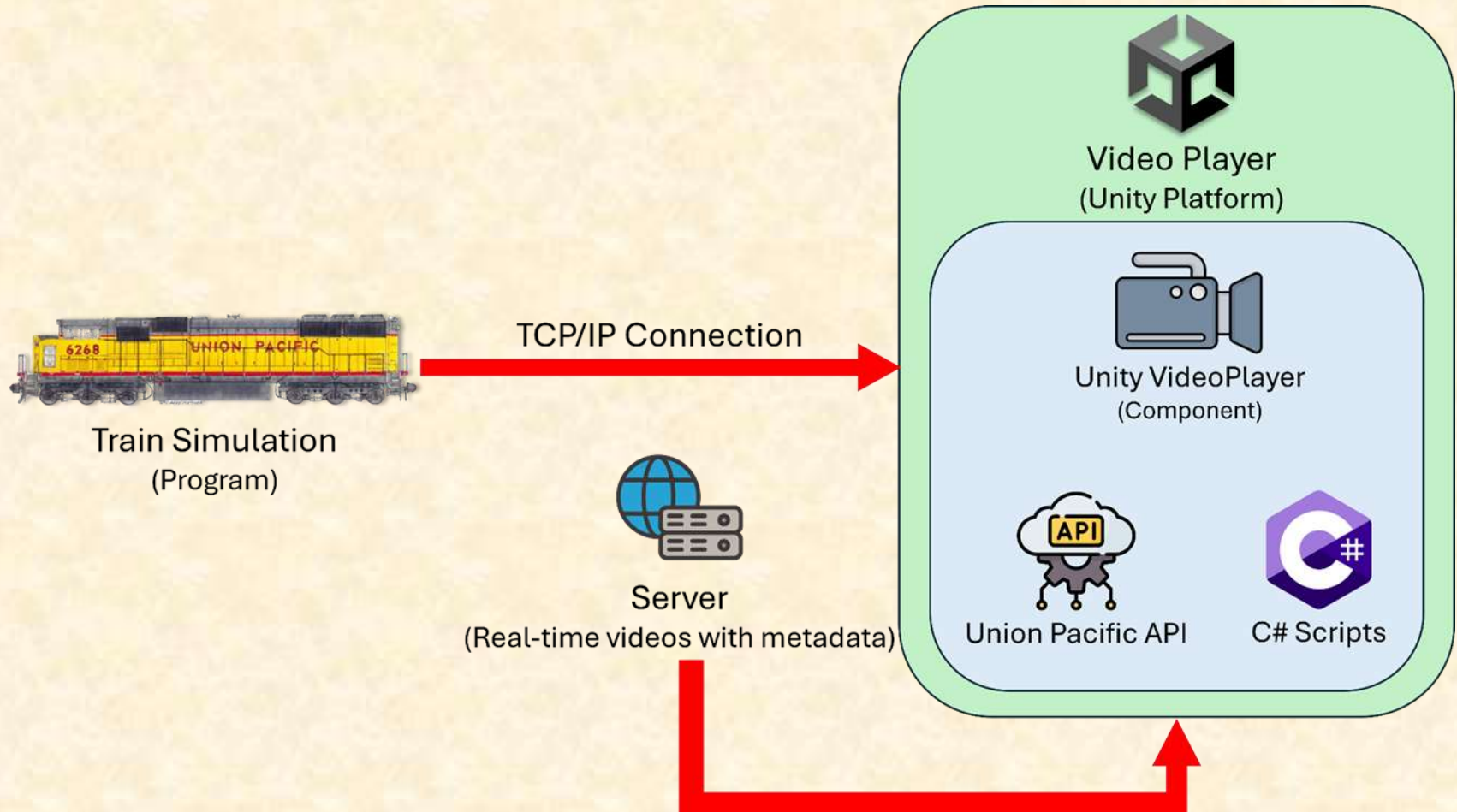
- Mohamed Ahmed
 - Develop Test Harness
 - API-Communication via threading
 - Nginx Server Set up
 - HTTP video streaming/transition
- Tre Benson
 - Train Modeling
 - Superimposing Signage
- Melinda Fadool
 - Develop Test Harness
 - Video Transition and Pre-loading
 - Train Teleportation
- Ravi Gangaiahnadoddi Kumar
 - Video meta-data XML Parsing
 - Splash/Loading Screens and UI
 - Weather
 - Nginx Server Set up
 - Route Selection
- Nico Roberts
 - API TCP/IP Connection
 - Video Frame Parsing
 - Pause Functionality
 - Mismatched Data threshold
- Abigail Werden
 - Local Video Playback + Transitions
 - Reversing
 - Points/Score UI
 - Wipers

Technical Tasks Completed

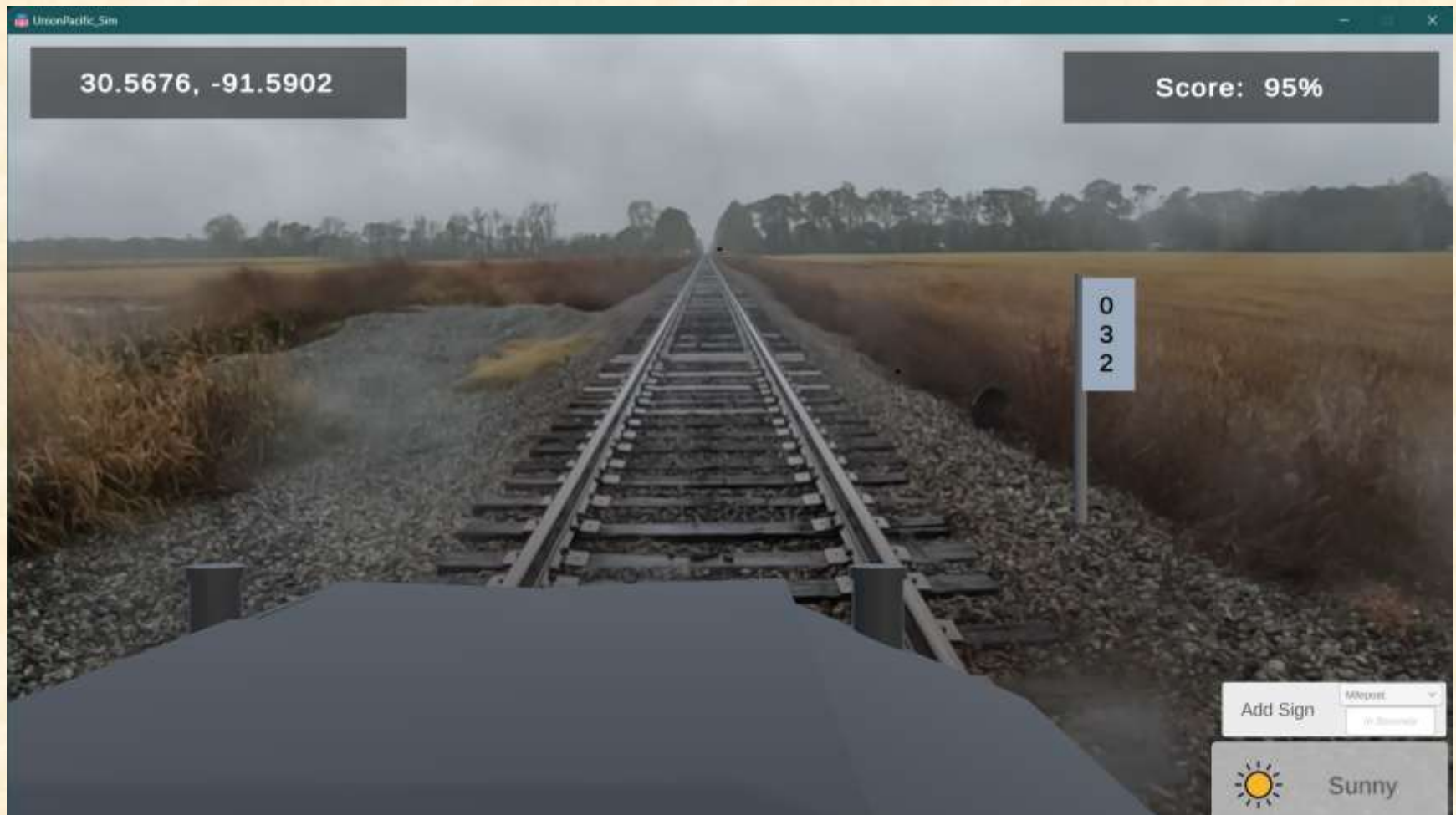
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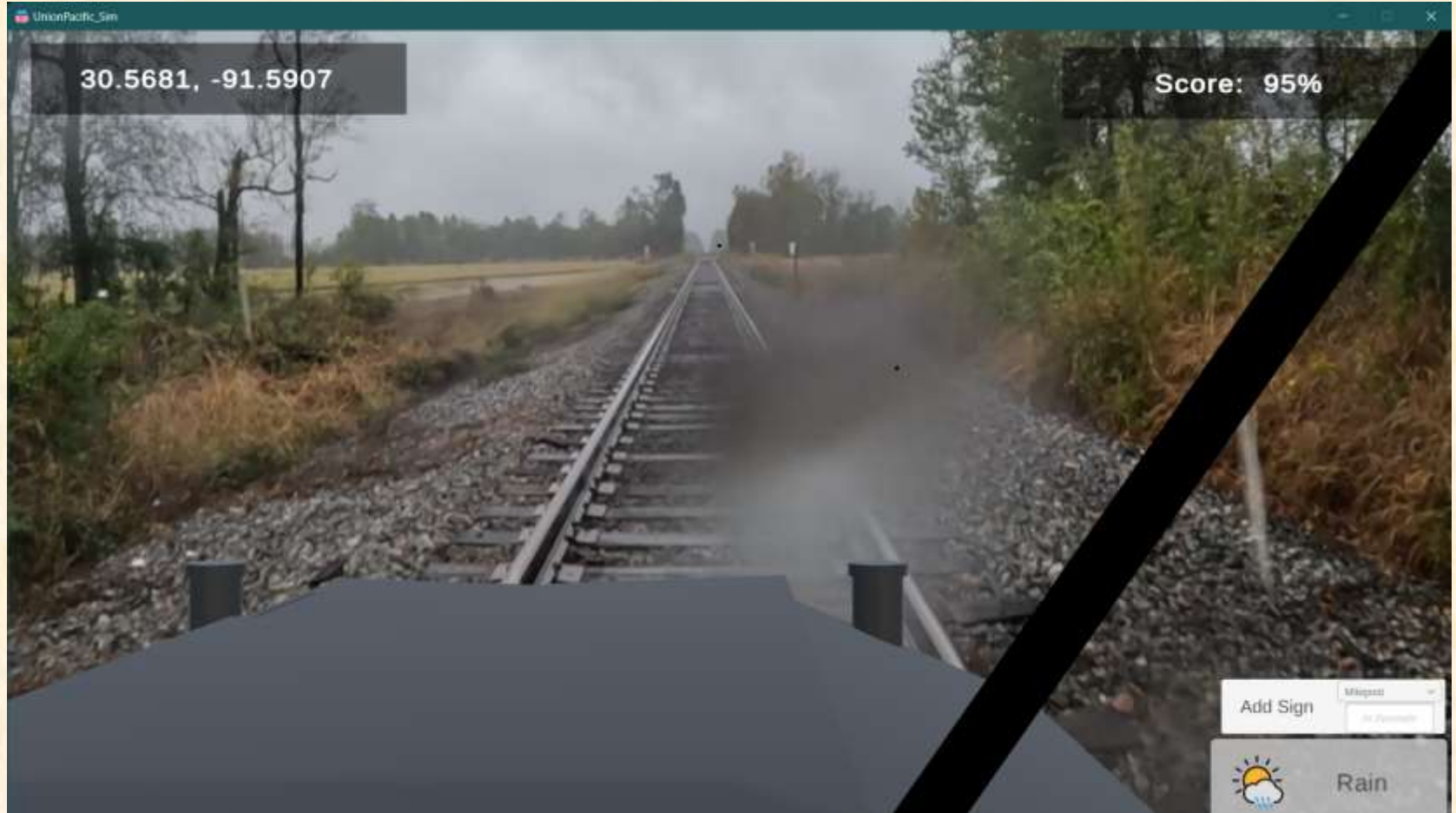
System Architecture



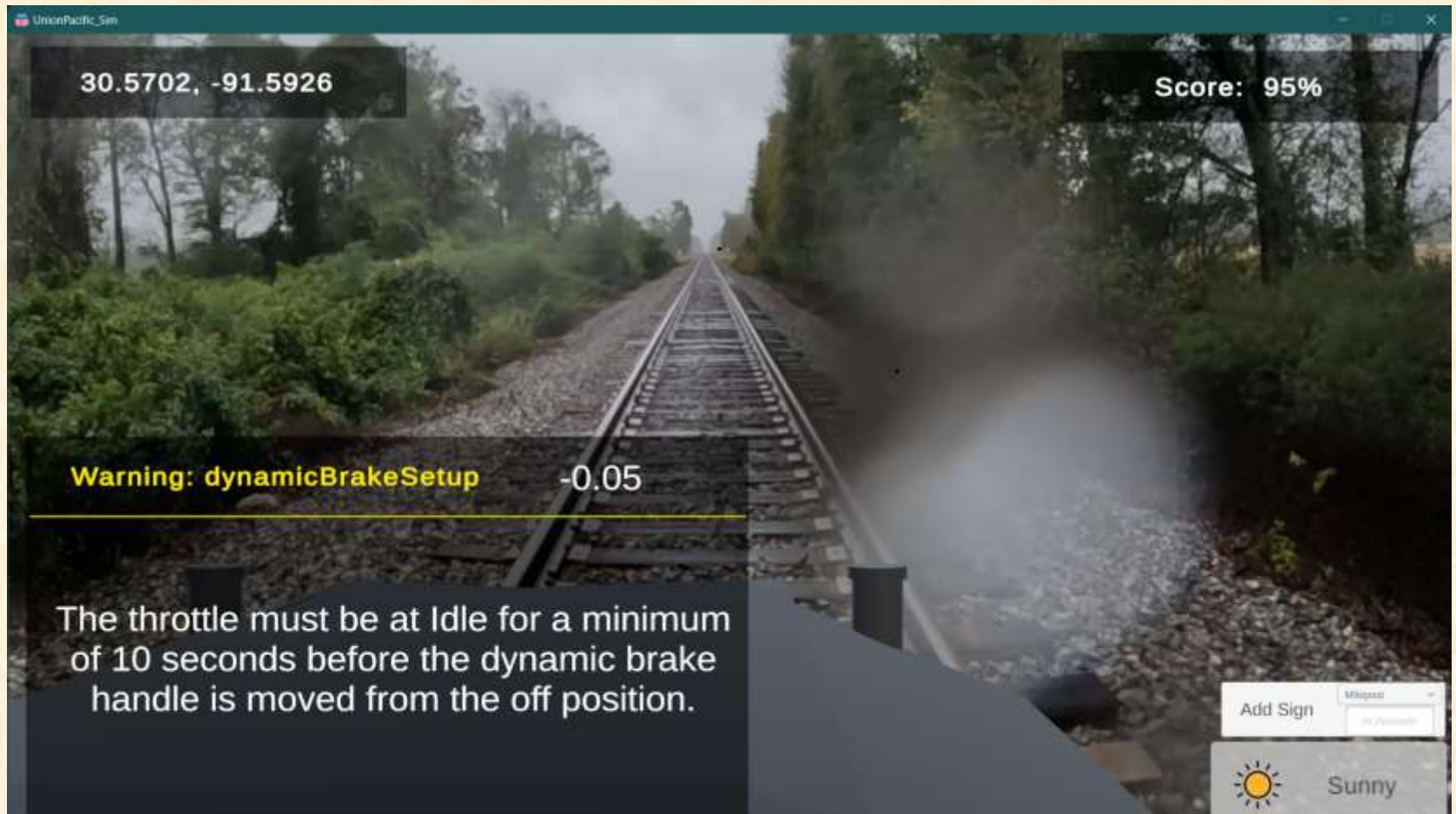
Super-Imposed Sign



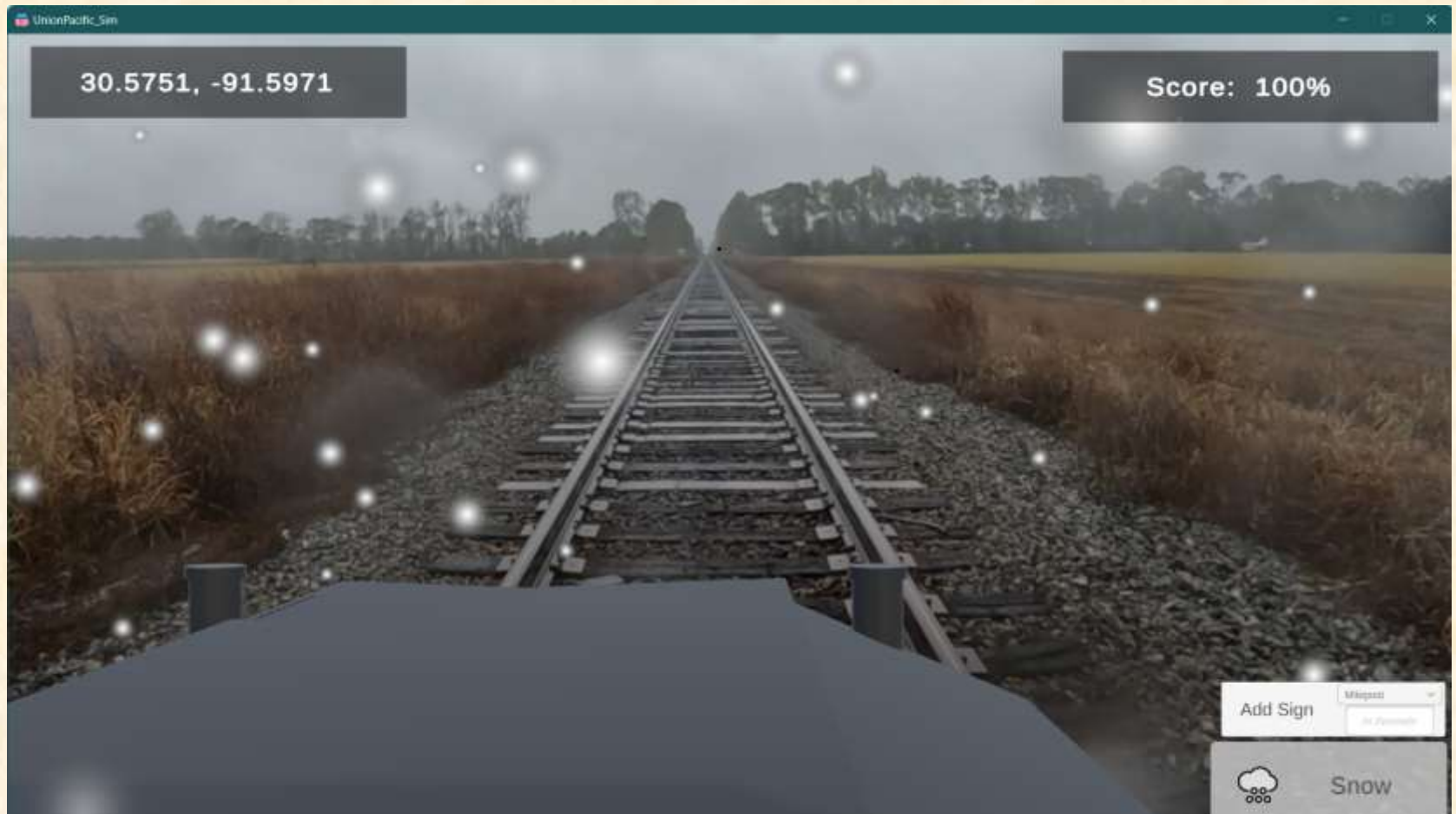
Wipers and Rain



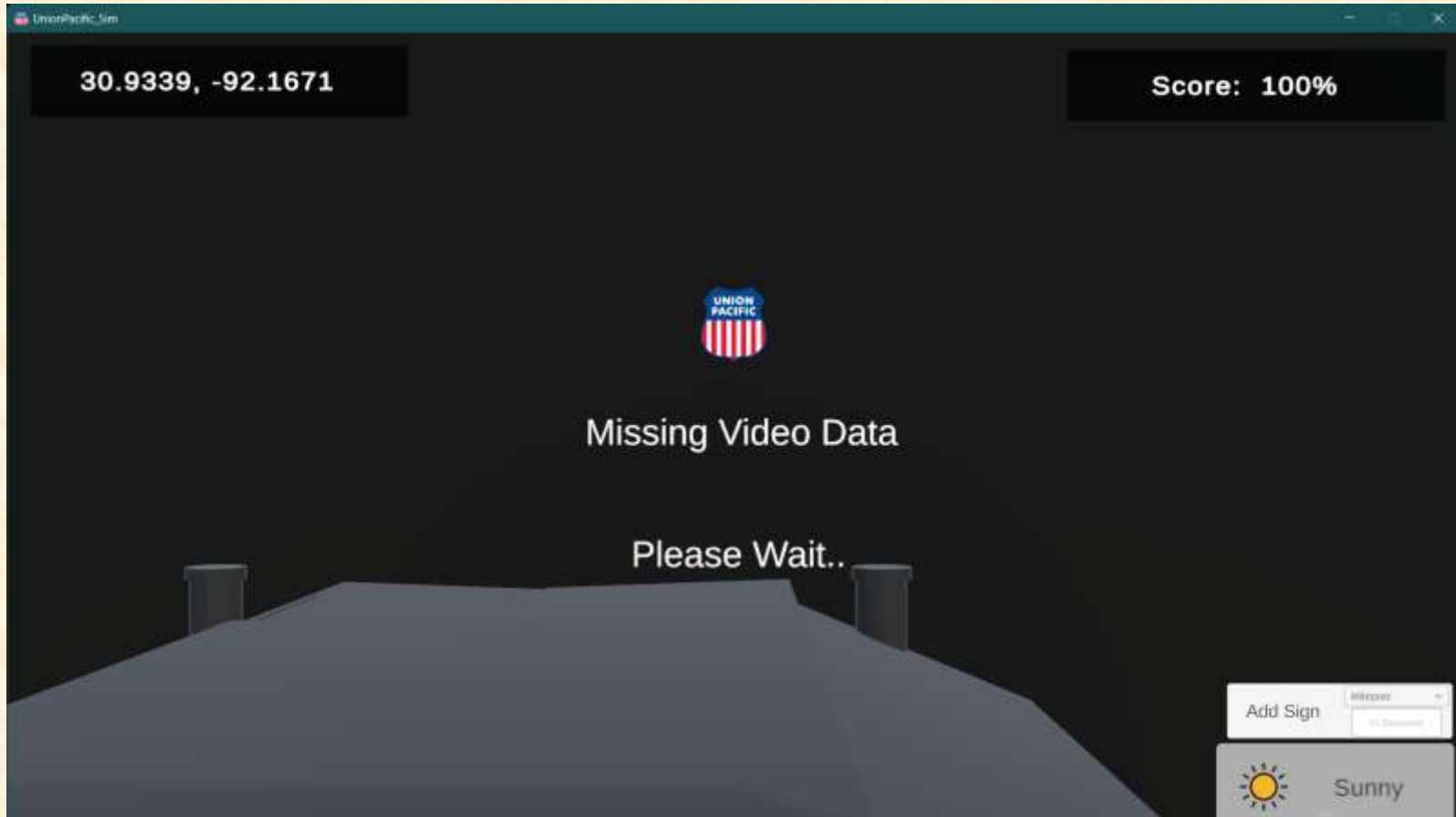
Warning and Score



Snow



GPS location doesn't have a corresponding video



What's left to do?

- Stretch Goals
 - Change color of signal lights
- Other Tasks
 - Compiling Final Build



Questions?

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