MICHIGAN STATE UNIVERSITY

Beta Presentation
Railroad Physics Data Visualization

The Capstone Experience

Team Union Pacific

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From Students…
…to Professionals

Department of Computer Science and Engineering
Michigan State University
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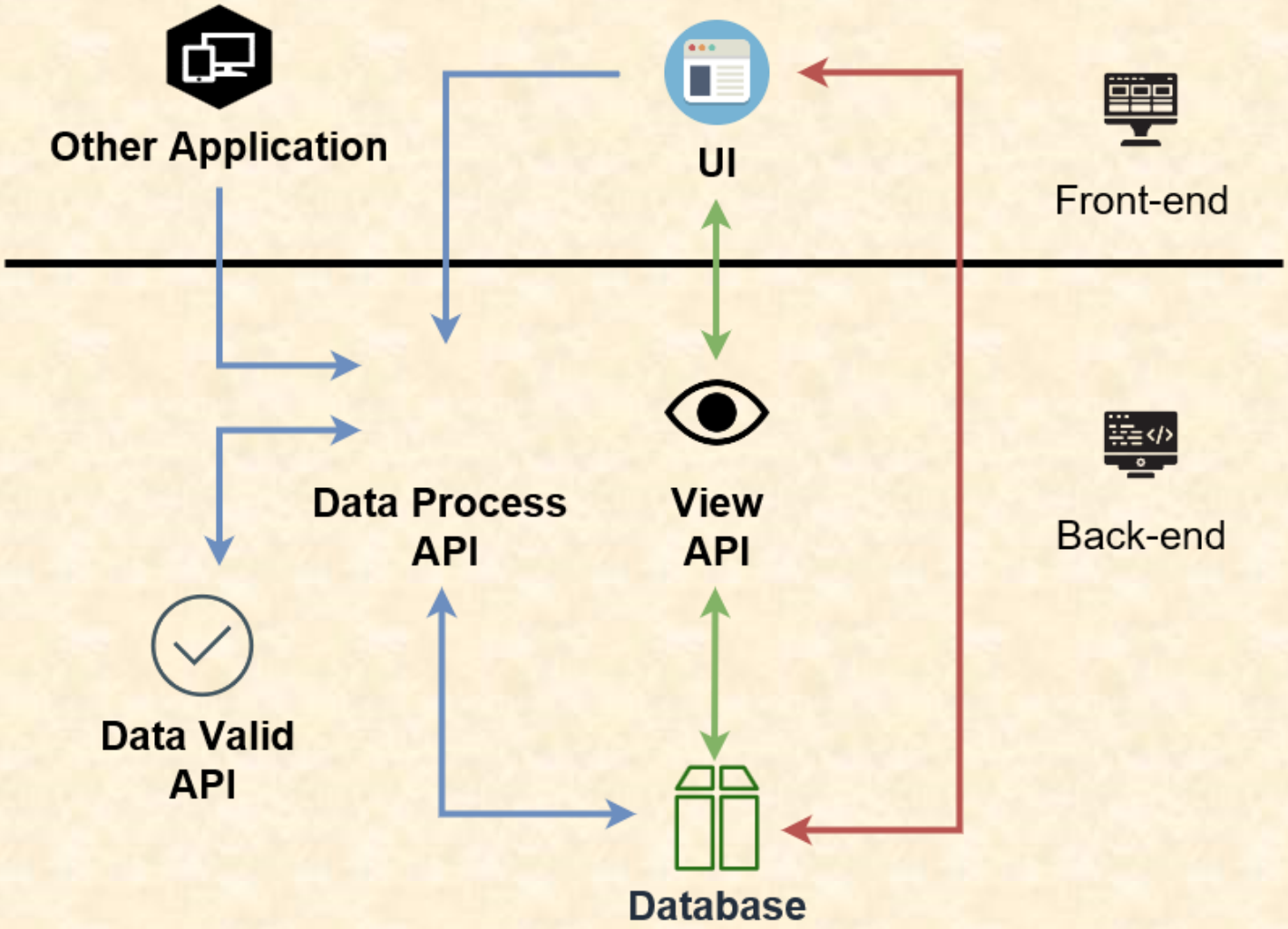
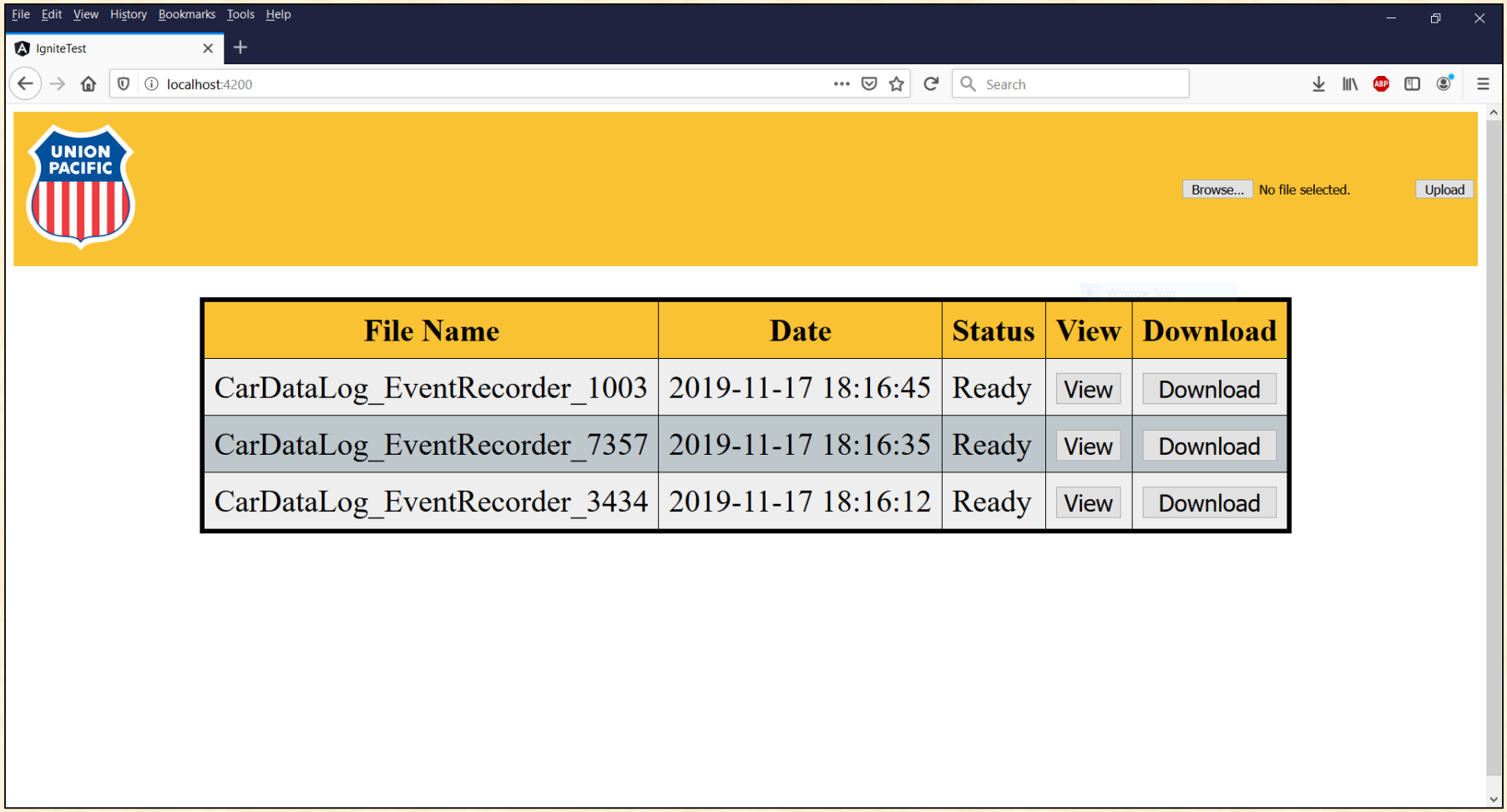
Project Overview

- PS Technology uses a Unity physics engine to simulate train runs
- Need a way to process data into visual outputs
- Their solution is web based UI to generate and display static and animated graphs

System Architecture



Web UI Table Component



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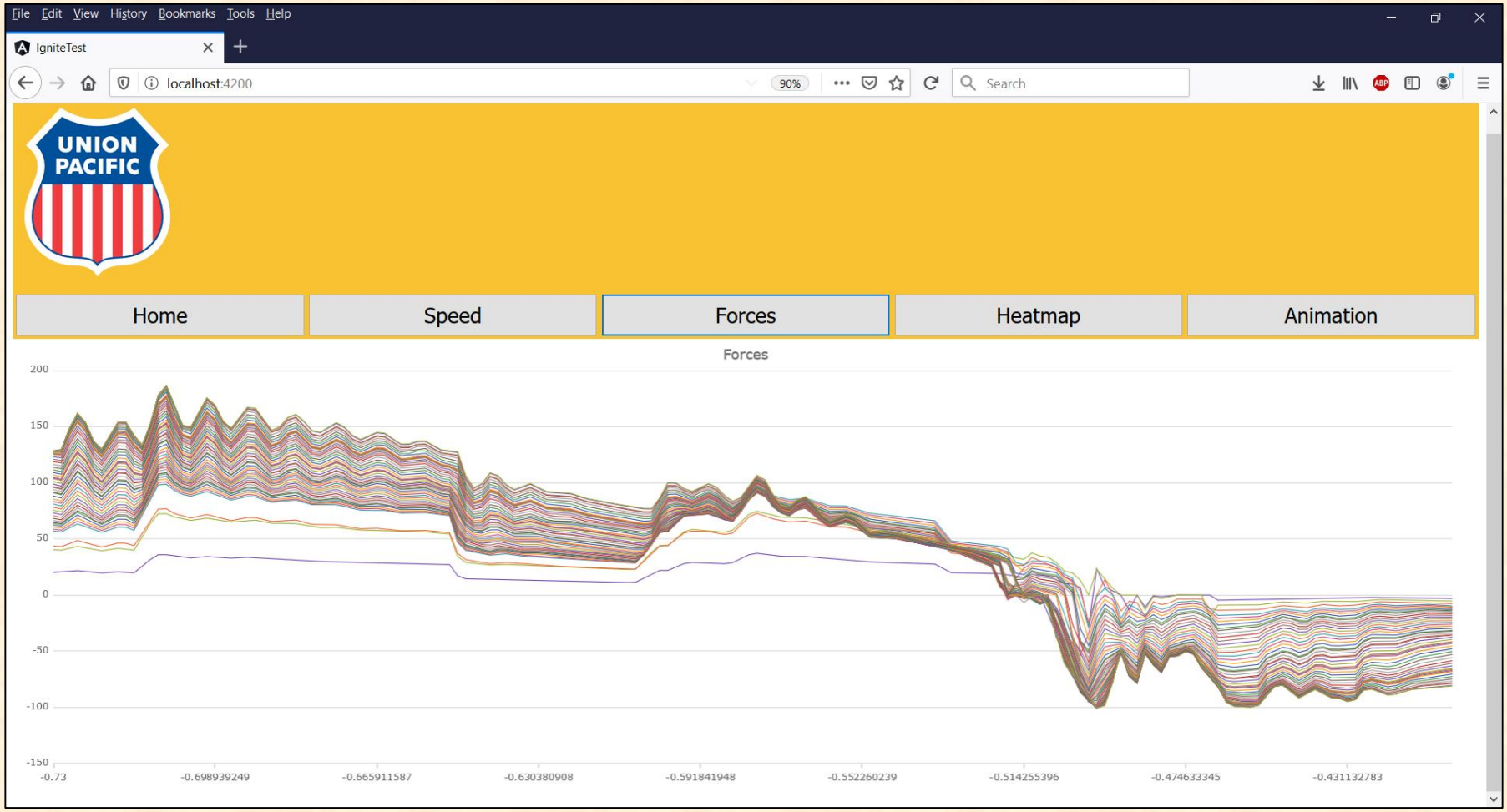
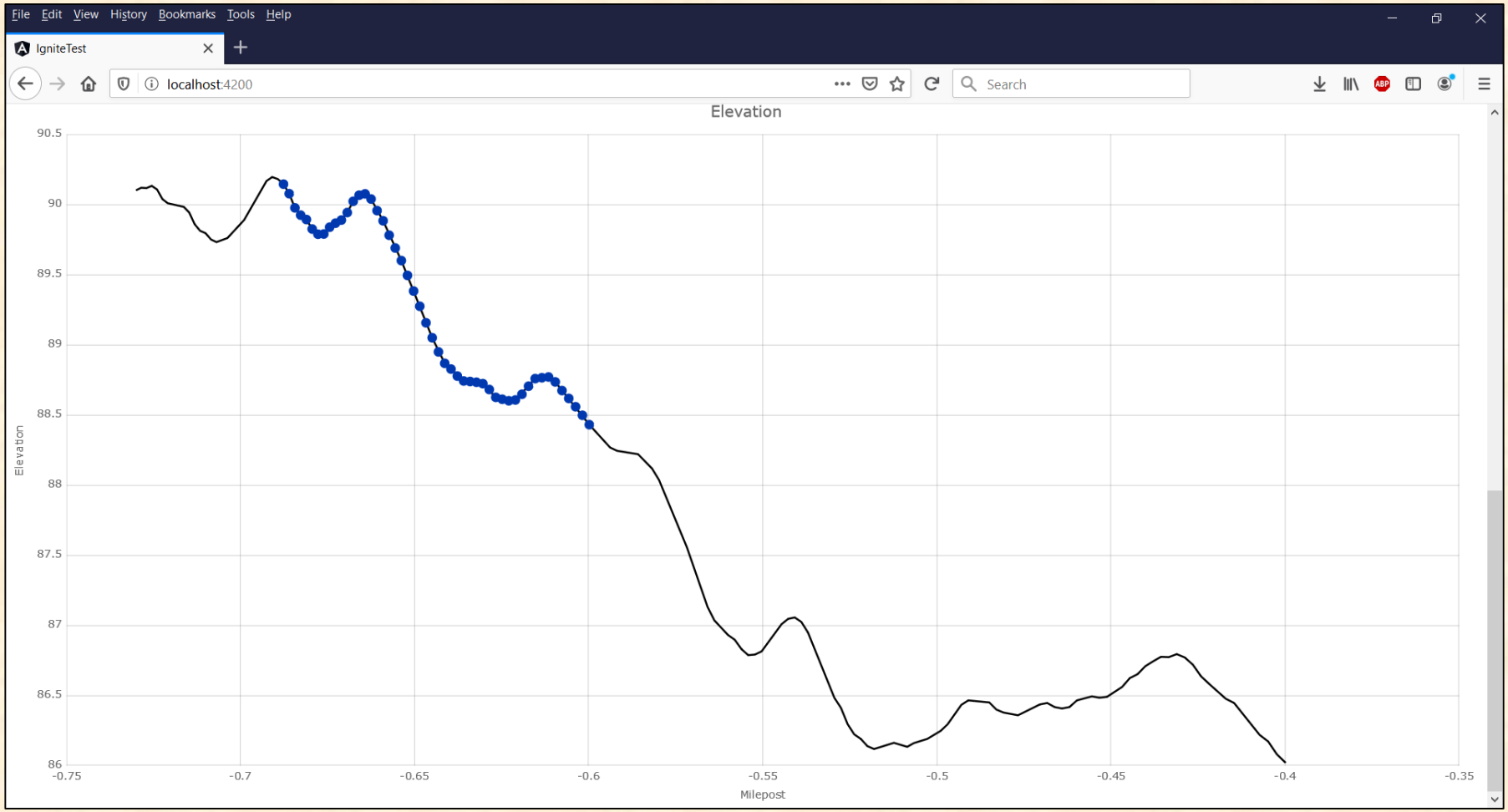
CarDataLog_EventRecorder_1003	2019-11-17 18:16:45	Ready	View	Download
CarDataLog_EventRecorder_7357	2019-11-17 18:16:35	Ready	View	Download
CarDataLog_EventRecorder_3434	2019-11-17 18:16:12	Ready	View	Download

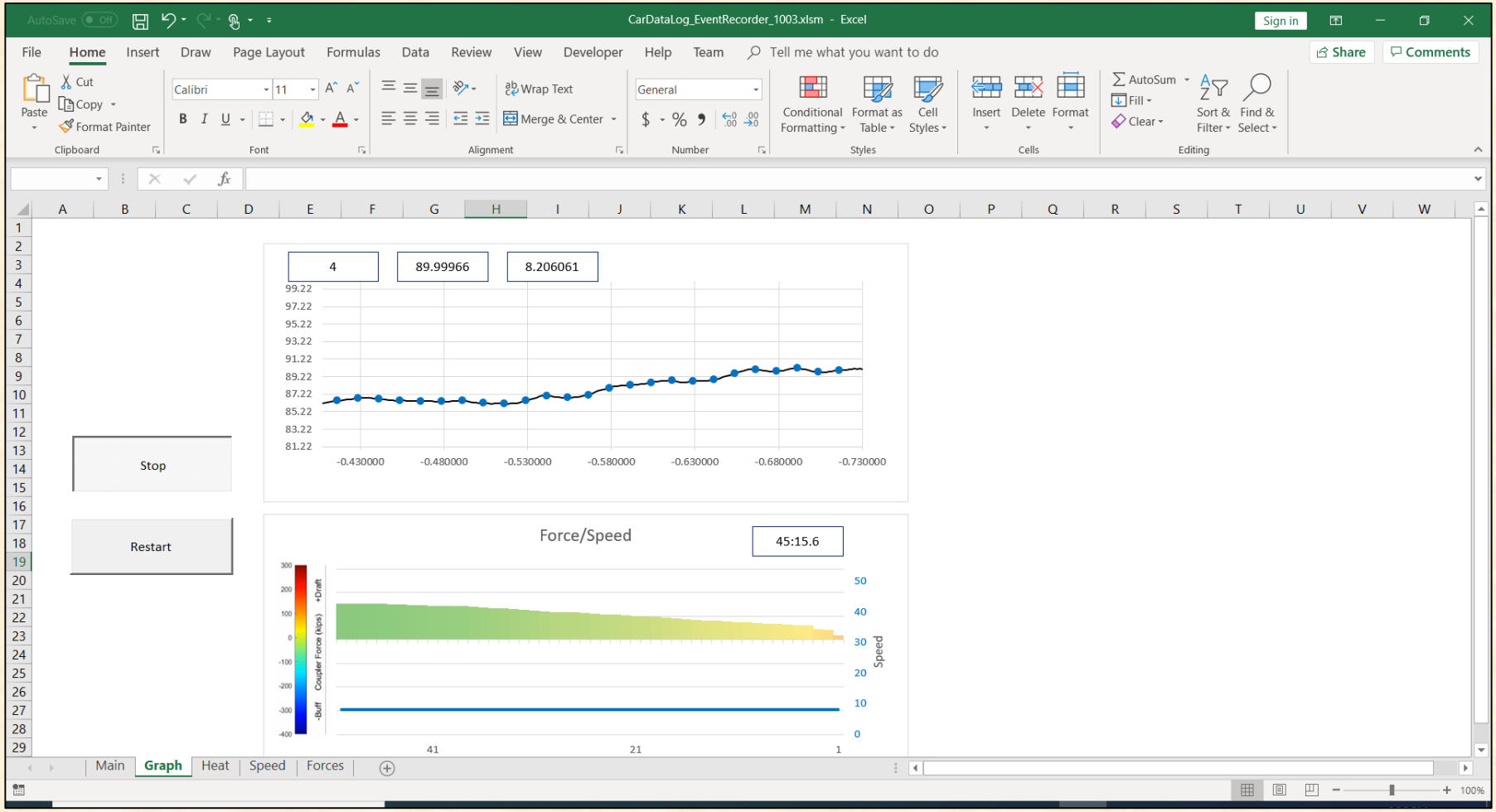
Web UI Graph Component: Forces



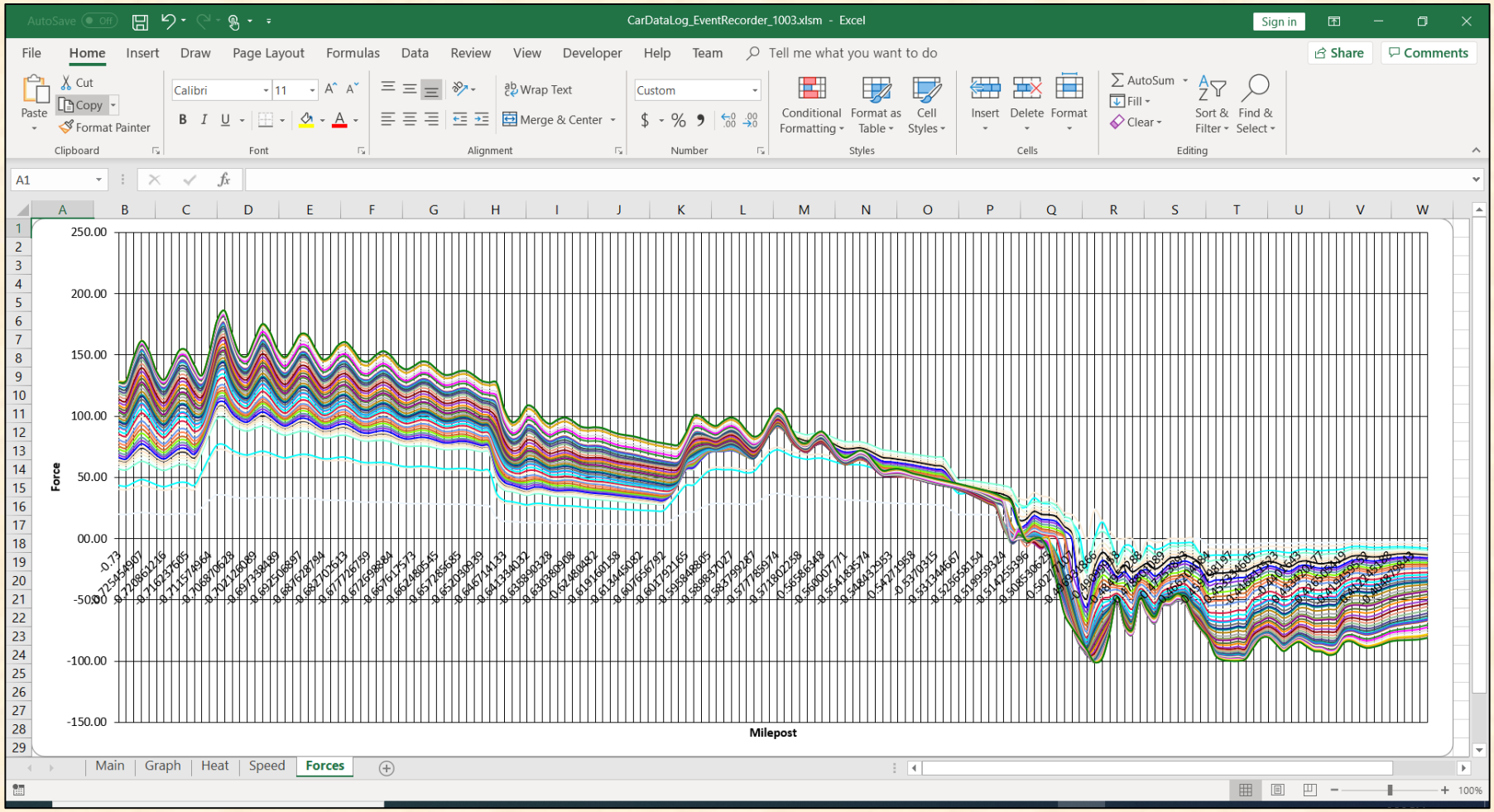
Web UI Graph Component: Animated elevation graph



Excel file: Animated graphs



Excel file: Forces graph



What's left to do?

- Allow web UI animated graphs to be paused
- Add extra info on web UI as shown on Excel file (speed line, time, throttle)
- Create smoothing functions for animated graphs
- Have validation API check for edge cases
- Validation check fails display error message on web UI not just URL

Questions?