2023-2024 Year Plan
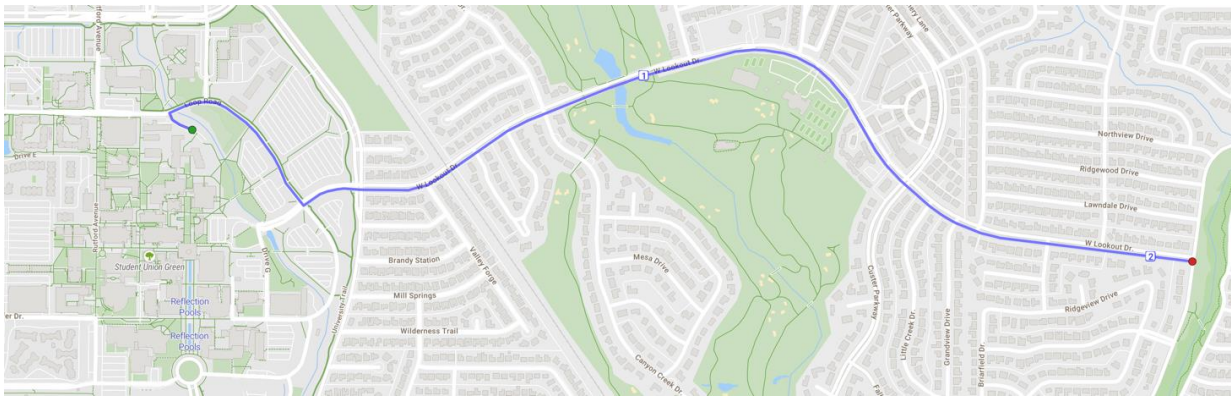
Navigator

By Daniel Vayman

2022-2023 result

DEMO 2: Admin Parking Lot to Prairie Creek Park via Lookout Drive – 2 Miles
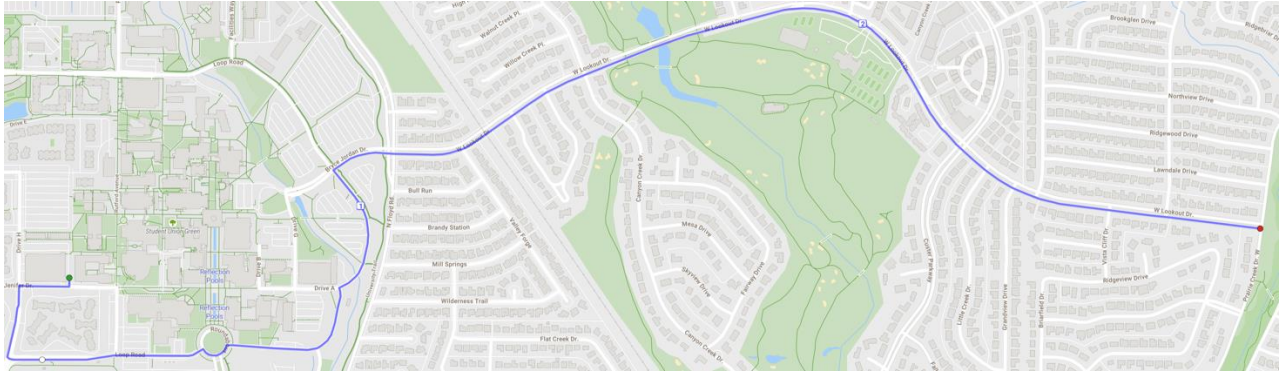
Successes:

- Built within 1 year from scratch
- Fully functioning perception, mapping, and planning cost-map subsystems
- Fully functioning throttle-by-wire, brake, steering, and hardware interfacing
- Teleoperation

Shortcomings:

- Relying on GNSS RTK for localization
- Rushed and semi-functioning path planner
- **Prerecorded route** (non-functioning routing)
- Scattered controller logic
- Rudimentary intersection management (human-assisted)

2023-2024 plan

Demo 3

ECSW to Prairie Creek Park via Lookout Drive – 2.8 miles

Keyword: *Scalability*

Demo 2 was a successful proof of concept. Demo 3 will demonstrate full functionality and full scalability of Navigator and its subsystems through additional capabilities and performance enhancements.

Key Features

- Localization & Better Mapping (SLAM)
- New Path Planner & Dedicated Controller
- Intersection Management
  - Requires contextual awareness beyond simple occupancy
- Custom User Interface
  - Allows a user to call Hail Bopp, choose a destination, and begin navigation via UI on our website.

Timeline

- **Demo 3**: Wednesday, March 6th, 2024
- UI Test: Wednesday, May 8th, 2024