Traffic Simulator Team

By: Mohammad Awais Zubair, Afreen Fatima, Sebastian Teslic, Sheza Bajwa and Ana Obradovic
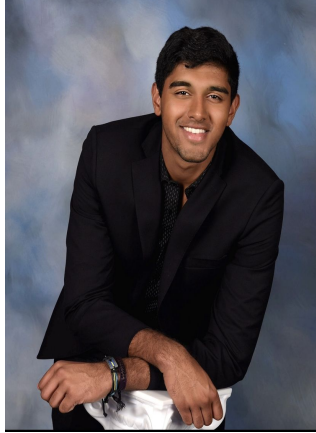
About Us

Afreen Fatima

Rutgers University
Major: Computer Engineering
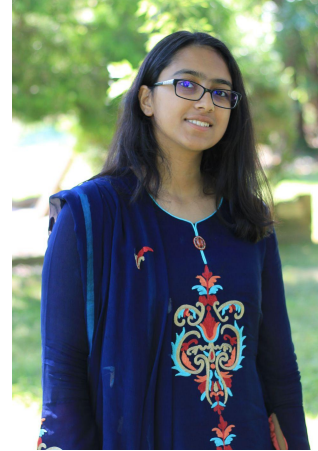Class: 2024

Sebastian Teslic
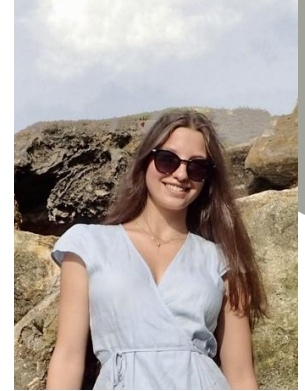
Boston University
Major: Computer Science
Class: 2024

Mohammed Awais Zubair

Rutgers University
Major: Computer Engineering
Class: 2023

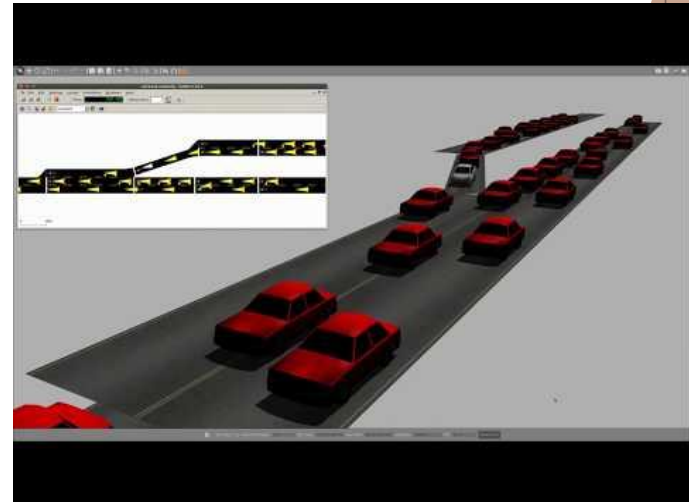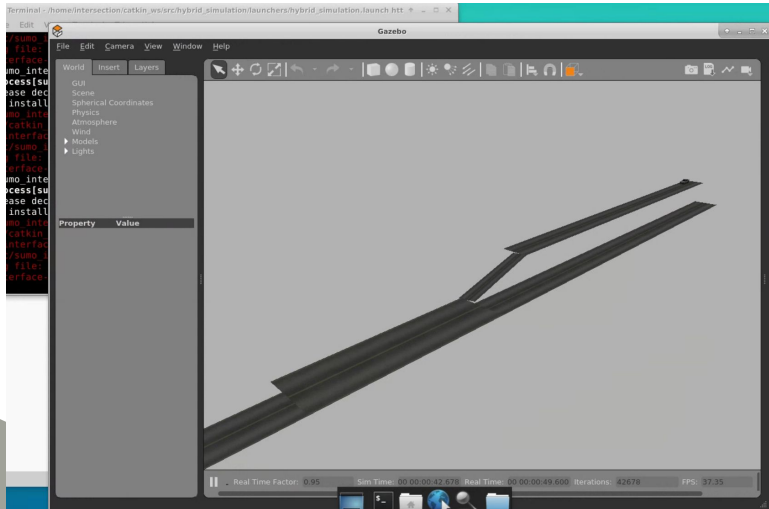**Sheza Bajwa**

East Brunswick High School

Ana Obradovic

Academy of Information Technology (HS)

Project Overview

- Develop a smart city intersection for the model intersection in the ORBIT lab
- The simulation is a testbed for self-driving research and we hope to emulate human driving

Methodology and Equipment

- SUMO – Simulation of Urban Mobility

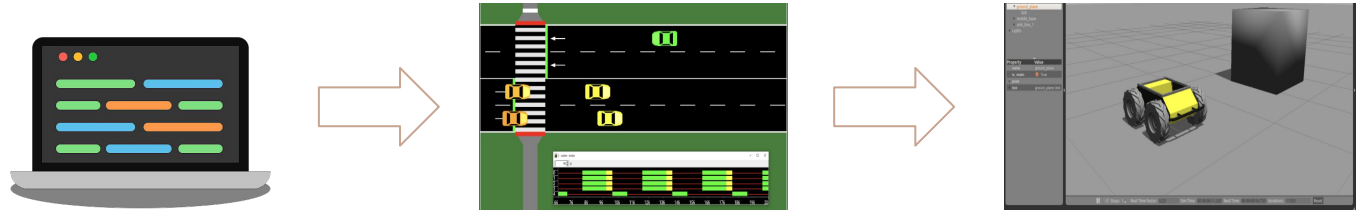- Gazebo – Robotics Simulation

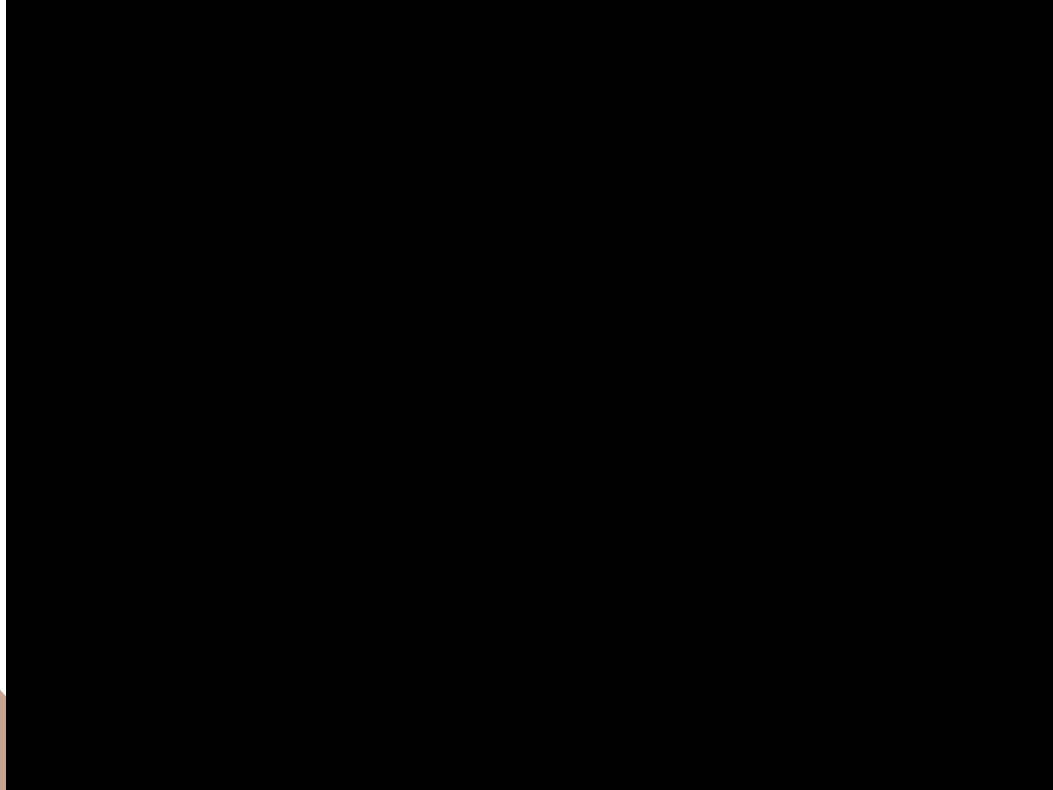- ROS – Robot Operating System (Melodic)

Project Goals

- Feed real–time data from SUMO to a Gazebo simulation

- Gazebo software will provide a 3D robotics simulation of the data collected from SUMO

- Create objects within the simulation such as a traffic light
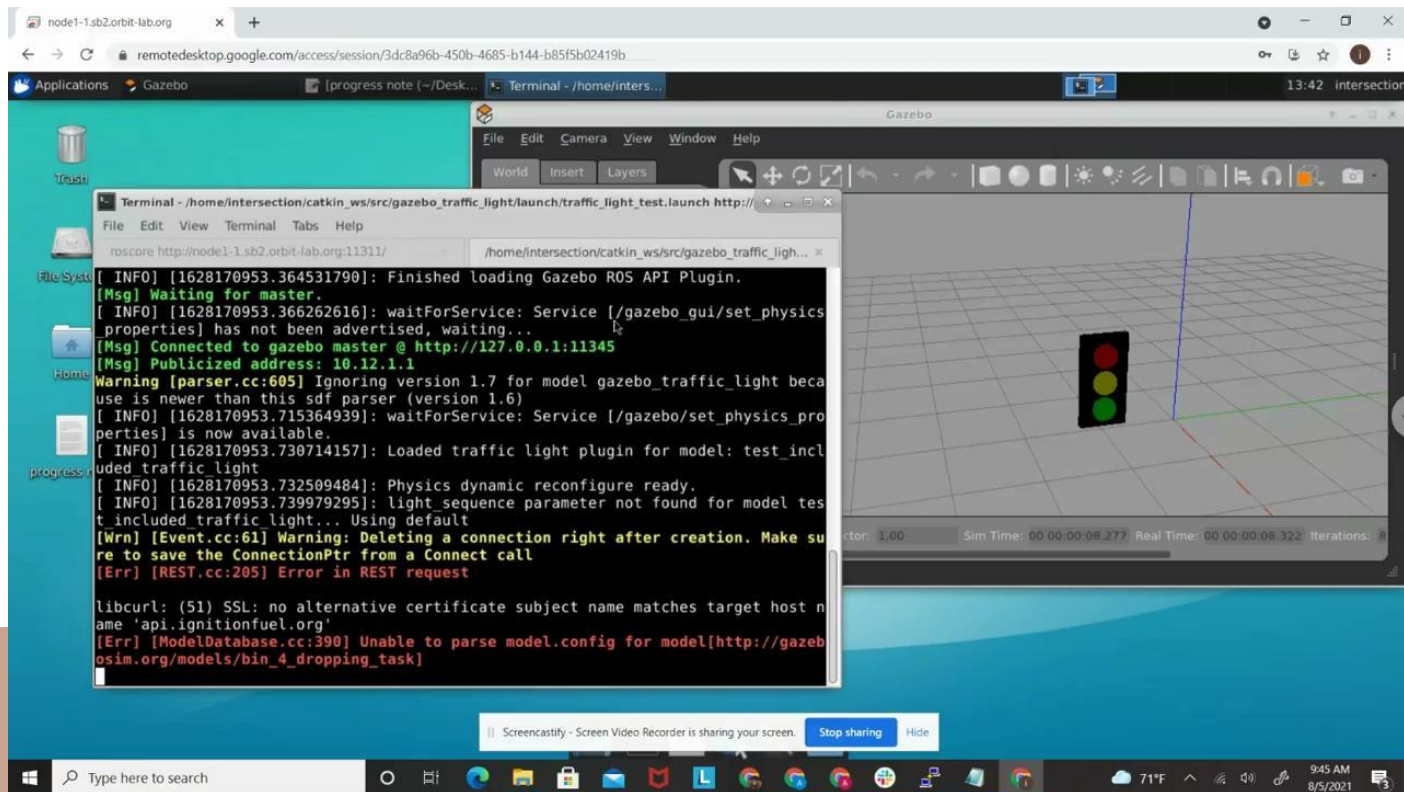
INTERSECTION MODEL AND EXPLANATION

- Gazebo receives information from SUMO → the software outputs a 3D rendered model

- Gazebo can receive this information as coordinates for street intersections, cars, pedestrians, stop lights, etc.

- These plug in values do not control the execution of the simulation – this must be done in the simulation itself
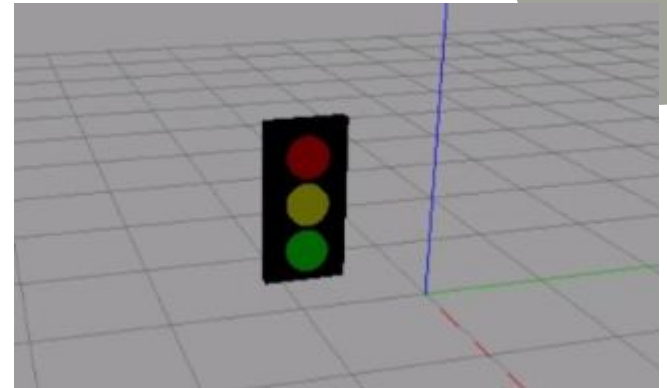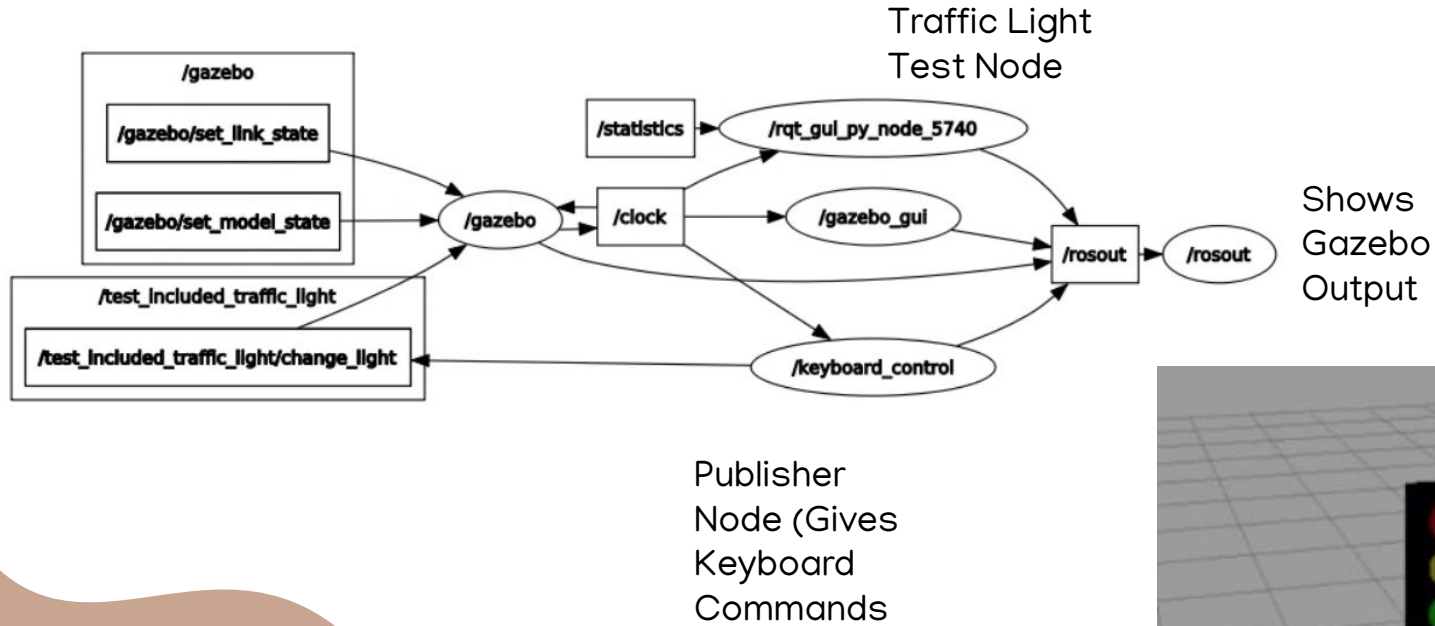
Intersection Simulation

Stoplight Video

Stoplight

/gazebo
- /gazebo/set_link_state
- /gazebo/set_model_state

/gazebo

/statistics → /rqt_gui_py_node_5740

/clock → /gazebo_gui

/test_included_traffic_light
- /test_included_traffic_light/change_light

/keyboard_control

/rosout → /rosout

Traffic Light
Test Node

Shows
Gazebo
Output

Publisher
Node (Gives
Keyboard
Commands

Thank You

Any Questions?