

Unity: Road Network and Vehicle Animation

Iftekharul Islam

Files for Today's Session

- Download and extract the zip file.
- Open a new project in Unity.
- Go to the Assets folder in that project and paste the **RoadArchitect** and **unity-traffic-simulation** folders there.



<https://tinyurl.com/cs690-lab4>

Agenda

- Creating a Road
- Creating Waypoints
- Spawning Vehicle
- Creating an Intersection

Creating Road ¹

- Create a Road Architect System GameObject via the *Window → Road Architect* file menu.
- Select the newly created Road Architect System GameObject and click "Add road" to add a road (located in the Road Architect System's inspector window).
- While a road object is selected:
 - Ctrl+Left-Click Add road nodes on the terrain while holding ctrl and left-clicking on the terrain location.
 - Shift+Left-Click Insertion mode: Insert road nodes on the terrain while holding shift and left-clicking on the terrain location.

¹ Taken from: <https://github.com/MicroGSD/RoadArchitect/wiki/>

Creating Waypoints ¹

- Create a Traffic System via Component -> Traffic Simulation -> Create Traffic Simulation
- Select the Traffic System object in the hierarchy
- Press Ctrl + Left Click to place the first waypoint of the segment (create a new segment)
- If you press Shift + Left Click it will continue the segment, otherwise step 3. to create a new segment. Usually a segment stops at an intersection. Note that the vehicle will follow the waypoints depending on the order you placed them.
- The next step is a bit tedious at the moment. Basically you have to link the segments between each other - so when the the segment ends at an intersection, you can go to a certain number of segments which will be picked up randomly by the VehicleAI. To do so, select a segment and plug your next segments in the Next Segments parameter.
- To create an intersection, press Alt + Left Click and select the intersection type (stops or traffic lights).
- Set the dimension of the intersection's box collider so it covers all the last waypoints (cf: below image). Also make sure that the height of the box collider is high enough to collide with your vehicle.

¹ Taken from: <https://github.com/mchrbn/unity-traffic-simulation>

Spawning Vehicle

- Go to Assets → unity-traffic-simulation → Assets → TrafficSimulation → Examples
- Load a vehicle prefab into the scene and change its settings in the Inspector panel as shown in class.

Creating an Intersection ¹

- Drag a node on top of another node. Can be from the same road or different roads.
- To create a 3-way intersection, utilize an end node (a road's first or last node) to create the intersection.
- Note: You can't create an intersection out of consecutive nodes of the same road.

¹ Taken from: <https://github.com/MicroGSD/RoadArchitect/wiki/>

More Assets

- You can find various assets suitable for your projects on the [Unity Asset Store](#).



Mobile Traffic System v2.0

★★★★★ 4.8 (57)
GLEY

\$49.50 \$99.00



Urban Traffic System Full Pack

★★★★☆ 3.6 (39)
AGLOBEX

\$299.00

SALE IN 5 DAYS



Road & Traffic System

★★★★☆ 3.8 (73)
WIRED DEVELOPMENTS PTY ...

\$25.00



Urban Traffic System

★★★★☆ 4.4 (26)
AGLOBEX

\$199.00

SALE IN 2 DAYS



Simple Traffic System

★★★★★ 4.9 (43)
TURNTHEGAMEON

\$35.00

SALE IN 9 DAYS



ITS - Intelligent Traffic System
(Source)

★★★★☆ 4.4 (10)
JOSE GARRIDO

\$200.00



DOTS Traffic City

★★★★★ 4.5 (11)
604SPIRIT

\$50.00 \$100.00

-50%



ITS - Intelligent Traffic System

★★★★☆ 4.4 (54)
JOSE GARRIDO

\$75.00

Related Resources

- <https://github.com/MicroGSD/RoadArchitect>
- <https://github.com/FritzsHero/RoadArchitect>
- <https://github.com/mchrbn/unity-traffic-simulation>
- https://www.youtube.com/playlist?list=PLnPqLrVfSAEIk_7Ug6IkknZCSW2GIR74g
- <https://assetstore.unity.com/>