

Simple Traffic Representation in Unity

Research Project at IKG



Introduction and goal of the project

As urban areas continue to grow, the challenges associated with traffic management become increasingly complex. Congestion, accidents, and inefficient transportation systems significantly impact our daily lives. A way forward is to exploit emerging technologies, such as the Intelligent Traffic System (ITS). One element is to model traffic situations in a virtual environment, e.g. using Unity.

The task of this research project is to explore how different traffic participants are represented in Unity and put them in mixed traffic scenes according to their respective characteristics (trajectories, speed, etc.). In this way, they can be easily visualized and be used in further user studies.

Different road users and infrastructures should be investigated, e.g.

- Pedestrians, vehicles and cyclists
- Trajectories and way points
- Basic urban environment



Tasks and time frame

1. Getting familiar with Unity basics
2. Coding to represent the locomotion of road users
3. Developing different approaches for visualizing way points
4. Organizing project in a proper and reproducible way and managing it with Git
5. Write short documentation with description of approach, experiments and main findings (5 pages);

Resources

- ▶ Unity assets, trajectory dataset

Requirements

- ▶ Programming skills (C#, or very familiarity with other programming languages)
- ▶ Ability to work independently
- ▶ Knowledge of Unity modeling (or strong willingness to learn it)

Contact person(s)

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