

Abstract Submitted
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Visualization and Simulation of Traffic Flow MICHAEL NSOR,
KISHOR KAPALE, Department of Physics, Western Illinois University — We are interested in simulating and visualizing different scenarios that cause traffic jams and develop strategies to avoid them for the benefit of traffic engineers and policy makers. We use a software suite called NetLogo for this purpose. NetLogo provides a powerful platform for studying, interpreting, visualizing, and replicating complex systems not only in Physics but also in other fields by using agent-based models. This project focuses on analyzing traffic systems by changing parameters such as number of cars in the traffic lane, acceleration and deceleration of cars chosen based on the surroundings. We link NetLogo with Mathematica for data visualization and automated control of the software over a large parameter range in order to study the effect of these parameters in the traffic system. This will help to better understand traffic management strategies. We will also look at how this study can influence features that may be useful to have in driverless cars.

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