

# IRYO LAB.

## [Toward Creation of Multimodal Transportation Spaces]

International Center for Urban Safety Engineering

<http://www.iis.u-tokyo.ac.jp/~m-iryoy/>

Traffic Space Analysis and Design

Department of Civil Engineering

### Traffic space design and control considering user reactions

Pedestrians, non-motorized vehicles and personal mobility vehicles attract a high level of interest as important traffic modes these days. As these modes need to share limited road spaces with ordinary vehicles, we need to effectively design the spaces for such mixed traffic considering their movement characteristics.

The aim of our research is to propose better layout and control of road/walking spaces to achieve efficient, safety and comfortable traffic for pedestrians and vehicles.

#### ◆ Vehicle-pedestrian communication for yielding

Evaluation of effective communication patterns to encourage vehicles' yielding maneuver and analysis of requirements for promoting the communications



#### ◆ Experiment and modeling for personal mobility vehicle maneuvers

Understanding the avoidance maneuver of personal mobility to propose requirements for cooperative mixed traffic



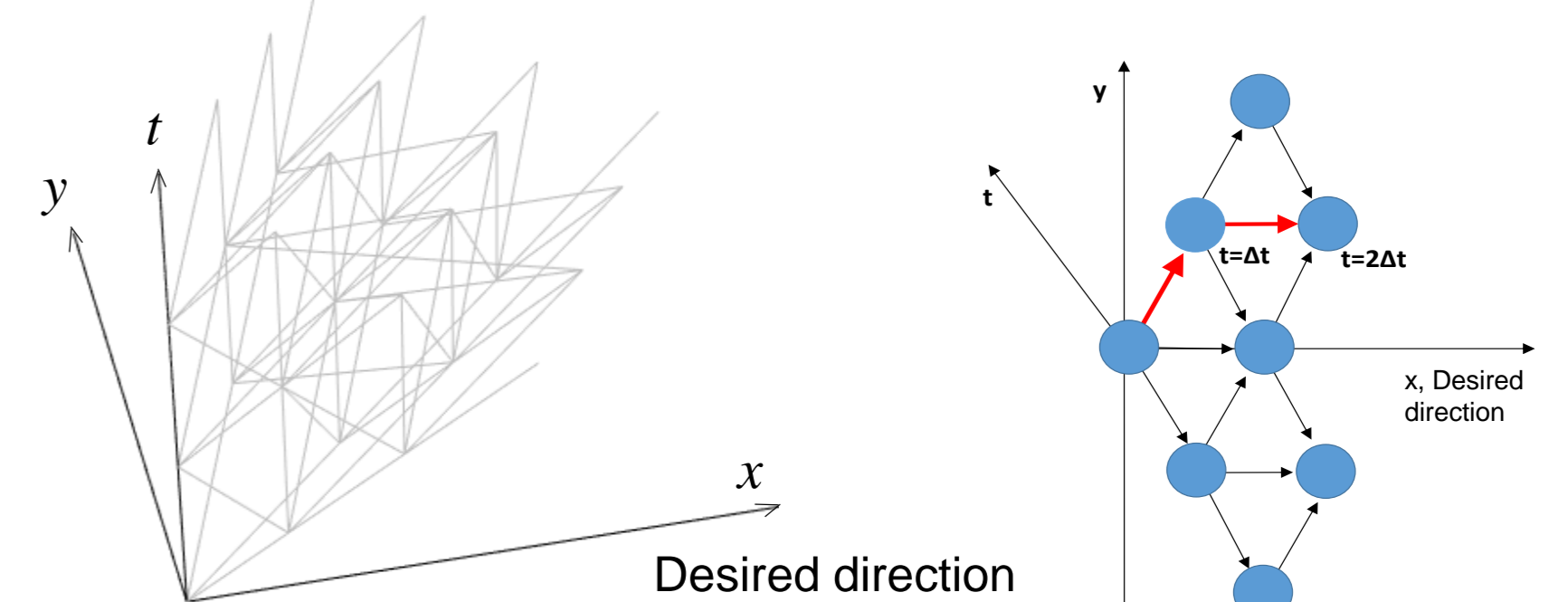
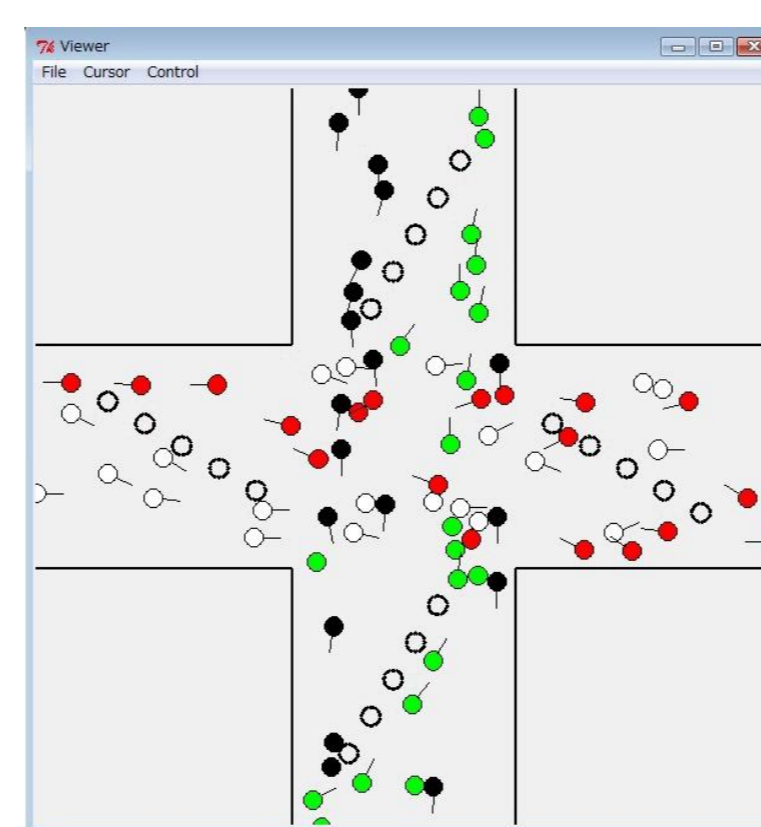
#### ◆ Speed guidance lighting system

The system expects users to adjust their speed by following speed guidance lights. This research validates stability of drivers' car following behaviors with the system.

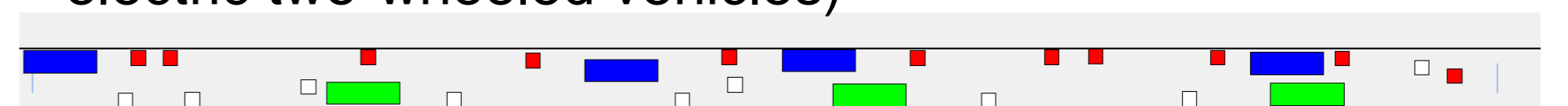


#### ◆ Pedestrian-vehicle traffic simulation

Modeling non-lane-based pedestrian / vehicle maneuver in order to evaluate impact of layout and traffic control on traffic flow

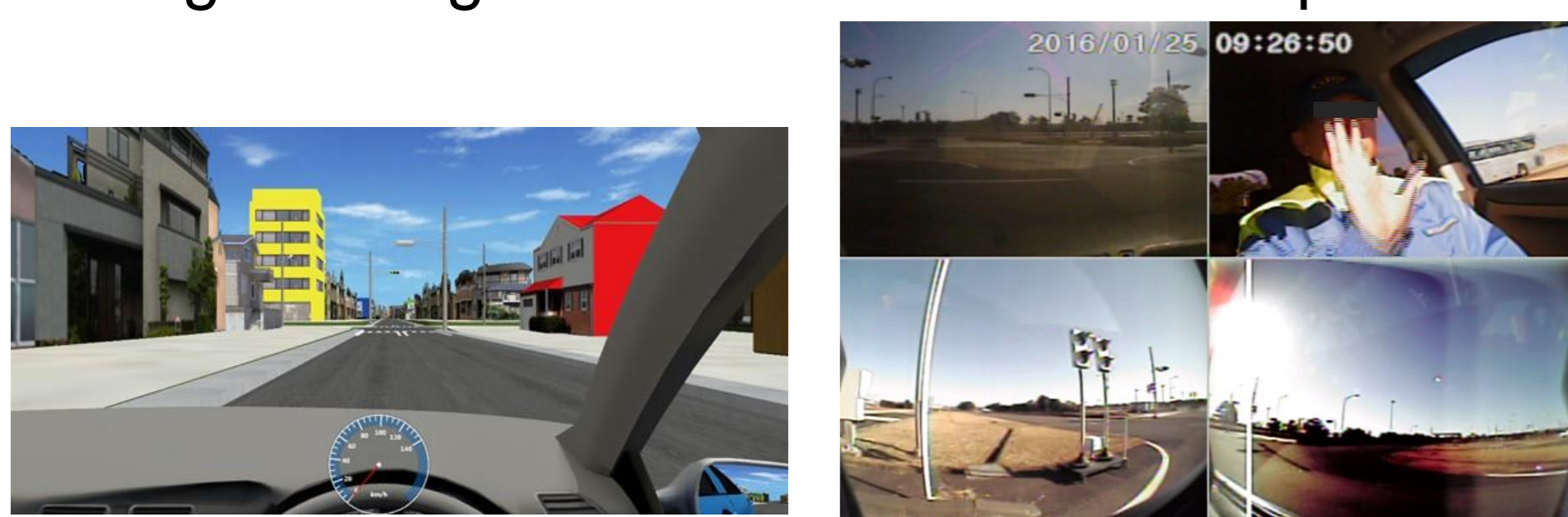


Path search in spatio-temporal network  
Simulation of mixed traffic (four-wheeled vehicles and electric two-wheeled vehicles)



#### ◆ Information provision considering individual difference of spatial cognition

Validation of the route guidance system which effectively uses landmark and verbal information through driving simulator and test field experiments



#### ◆ International comparison for design and control of safer at-grade intersections

Analyses of vehicle and pedestrian maneuvers at intersections in several countries for validating different standards of intersection layouts and signal controls

Pedestrian and turning vehicle maneuver analysis at New York City

