

IRYO LAB.

[Toward Creation of Multimodal Transportation Spaces]

International Center for Urban Safety Engineering

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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.

◆ Understanding characteristics of user maneuver by experiments and field observations



- Personal mobility vehicles

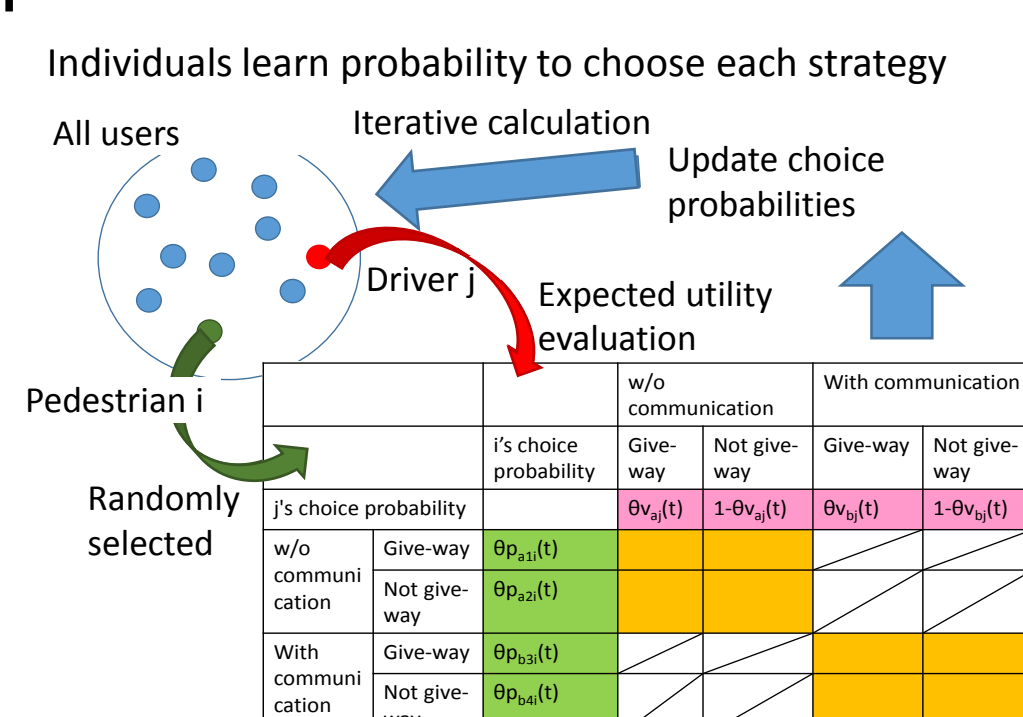
Analysis of personal mobility vehicles' avoiding behavior



- Vehicle-pedestrian communication and its impact on priority

Evaluating types of effective communication for pedestrians' safer crossing

Analysis of required condition for promoting the communication



- Speed guidance lighting system

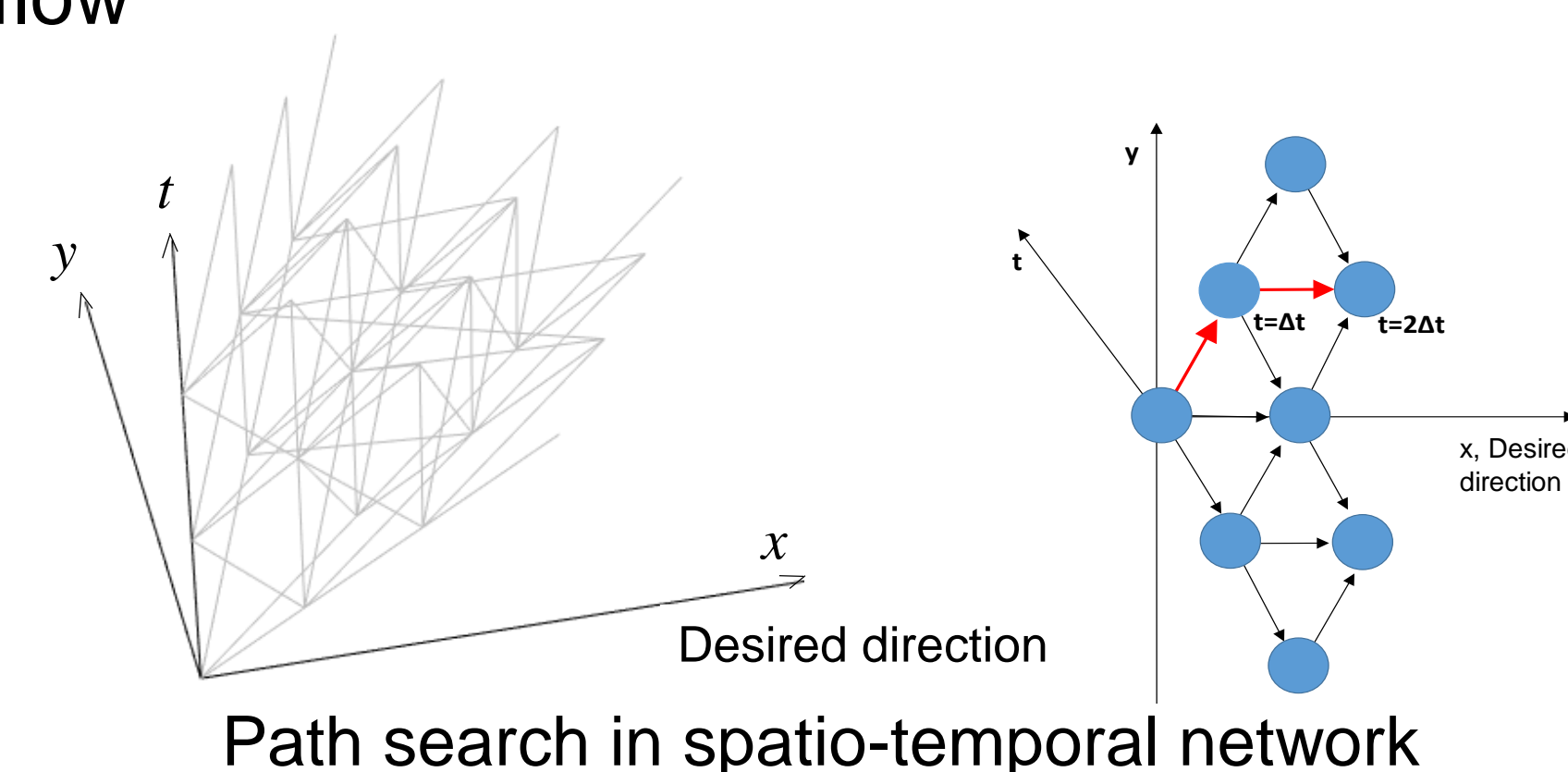
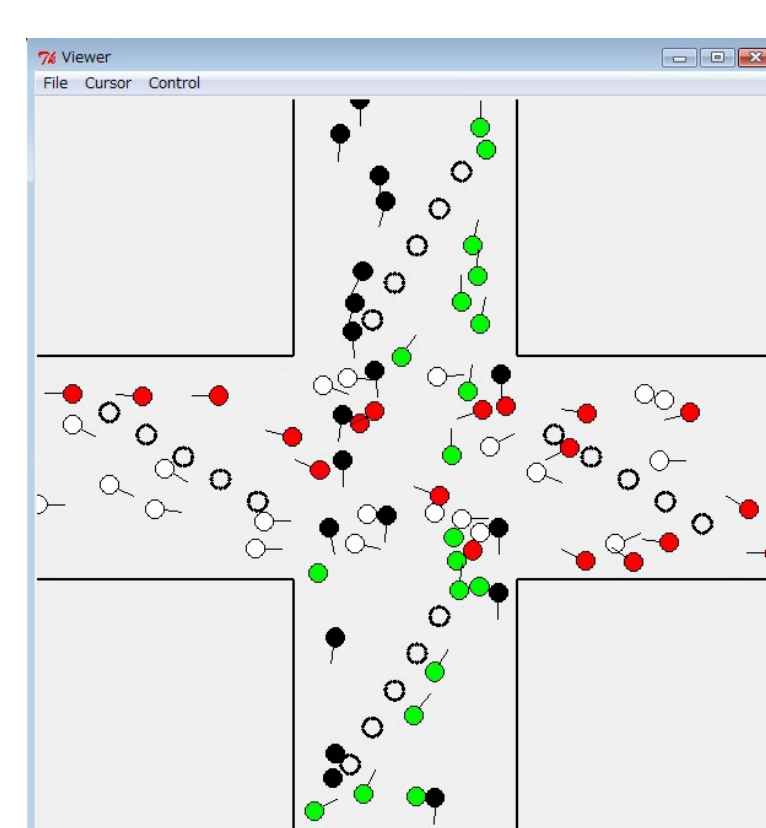
The system expects users to adjust their speed by following speed guidance lights. This research validates stability of drivers' car following behaviors with the system.



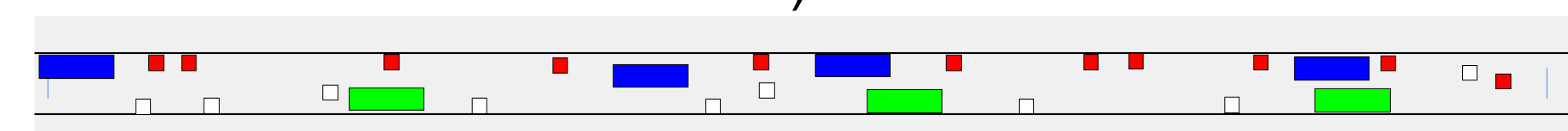
Speed guidance light

◆ Pedestrian-vehicle traffic simulation

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



Simulation of mixed traffic (four-wheeled vehicles and electric two-wheeled vehicles)



◆ International comparison of pedestrian traffic signal operation for safety

Meaning of pedestrian traffic signal indication varies in different countries. This strongly affects on performance of intersections. The research proposes preferred design of pedestrian traffic signals for safety.



◆ Facility allocation considering stop choice behavior at access roads to railway stations

Simulation development for evaluating congestion countermeasures

