

K. NAKANO LAB.

Safe and Comfortable Mobility for Everyone



Department of Mechanical and Biofunctional systems
Harmonic Mobility Research Center (ITS Center)

Mechanical and Biological Systems Control

Department of Mechanical Engineering, Graduate School of Interdisciplinary Information Studies

http://www.knakanolab.iis.u-tokyo.ac.jp/english/index_en.htm

Based on the fundamental fields of mechanics, vibration and control, research is carried out on condition monitoring, ergonomics, human-machine interface, automated driving and cooperative systems related to mobility. Non-technical issues, called ELSI, are also addressed with the aim of implementing these technologies in society. The main research topics are

1. Evaluation of Performance of Shared Control
2. Evaluation of Human Machine Interface for Vehicle - infrastructure Cooperative Driver Assistance
3. HMI Based on Human Foresight Prediction for Advisory Take-over Timing
4. Understanding and Optimizing Situational Acceptance in Automated Driving
5. Toward Interpretable Urban Automated Driving through Style-Aware Trajectory Planning and Semantic Reasoning
6. Unified Traffic Control System for Railway and Road Vehicles Using Mobile Phone Line
7. Enhancing Multi-Agent Traffic Signal Control in Complex Environments Using Large Language Models
8. Pedestrian Trajectory Prediction for Safe and Efficient Autonomous Tram Systems
9. Machine Learning-Based Estimation of Condition Between Rail and Wheel from Measured Values of a PQ Wheelset
10. Implementation of Level 4 Automated Driving Operations in the Kashiwa-no-ha Area
11. Building the Method for Social Implementation of Automated Driving Technology Complying with Actual State Based on ELSI

