SHINTARO ONO LAB
(Proj. Assoc. Prof.)

[Sensing and Visualization for ITS]

Vehicle Dynamic Control Strategy of Automated Driving*
Advanced Mobility Research Center (ITS Center)
Mechano-Informatic Mobility Engineering

http://www.its.iis.u-tokyo.ac.jp/onoshin/

*Corporate Sponsored Research Program

---

**Basic Technology for Automated Driving -- Toward wider ODD --**
- Hand signal recognition
- Detecting road safety mirror
- Event detection inside mirror
- Vehicle recognition at night
- Data augmentation for night images using image style transfer

**Videc-based Driving Simulator**
- Enhancing reality using real video for background

**System for Information Collection, Integration, Visualization, and Distribution**
- General Citizen
  - More awareness
  - Behavioral change
  - Use public trans.
  - Choose eco-route
  - Do eco-driving

Reducing CO₂ Emission by Raising Awareness of Citizens.
Social experiment in Kashiwa City proved the possibility of 8% reduction by the Regional Transport Information System for promoting eco-friendly travel behavior.

**Space-time Video Processing**
- Separating foreground/background by spacetime filtering

**Detecting Unusual Events**
- Flood detection for driving video
- Data augmentation using CG and GAN

**Sensing by Specialized Vehicle**
- 3D Modeling of Road Structure

**Sensing by General Vehicles**
- Super Resolution (Refinement) of Super Wide-Angle On-Vehicle Camera

---

More awareness
Behavioral change
Use public trans.
Choose eco-route
Do eco-driving

Street Panorama before East Japan Earthquake Reconstructed from Driving Video Recorder