14:00-17:00, June 8, 2014, in conjunction with IV2014

Workshop on Benchmarking Road Terrain and Lane Detection Algorithms for In-Vehicle Application

Chunzhao Guo, Toyota Central R&D Labs., Inc., Japan
José M. Álvarez, NICTA, Australia
Jannik Fritsch, Honda Research Institute Europe, Germany
Andreas Geiger, Max Planck Institute for Intelligent Systems, Germany

Plenary Session

14:00-14:30 Keynote

Introduction of KITTI-ROAD for Benchmarking Road Detection Algorithms

Fritsch, Jannik Honda Research Institute Europe

14:30-15:00 Open Discussion

Towards co-evolution of road / lane detection and benchmarking

Regular Session (*Peer-Reviewed*)

Workshop Papers

15:30-15:45 Paper SuWS_PM22.1

Comprehensive Performance Analysis of Road Detection Algorithms Using the Common Urban Kitti-Road Benchmark

Bernardes Vitor, Giovani — Univ. de Tech. de Compiègne (UTC)
Correa Victorino, Alessandro — Univ. de Tech. de Compiègne (UTC)
Vaqueiro Ferreira, Janito — State Univ. of Campinas - UNICAMP

15:45-16:00 Paper SuWS_PM22.2

Performance Evaluation for Curb Detection Problem

Stainvas, Inna — Advanced Res. Tech. Center, GM
Buda, Yosi — Advanced Res. Tech. Center, GM

16:00-16:15 Paper SuWS_PM22.3

Color-Based Road Detection and Its Evaluation on the KITTI Road Benchmark

Wang, Bihao — Univ. de Tech. de Compiègne
Fremont, Vincent — Univ. de Tech. de Compiègne
Rodriguez Florez, Sergio Alberto — Université Paris Sud.

Main Conference Papers

16:15-16:30 Paper TuPoster Session IIB1.4

Road Terrain Detection: Avoiding Common Obstacle Detection Assumptions Using Sensor Fusion

Shinzato, Patrick — Univ. of Sao Paulo
Wolf, Denis — Univ. of Sao Paulo
Stiller, Christoph — Karlsruhe Inst. of Tech.

16:30-16:45 Paper WePoster Session IIIB1.22

A Multi-Modal System for Road Detection and Segmentation

Hu, Xiao — Univ. de Tech. de Compiegne
Rodriguez Florez, Sergio Alberto — Univ. Paris Sud.
Gepperth, Alexander — Ec. National Superieure de Tech. Avancées

16:45-17:00 Paper MoPoster Session IB1.1

Camera-Based Lane Border Detection in Arbitrarily Structured Environments

Schomerus, Volker Patricio — Tech. Univ. Braunschweig
Rosebrock, Dennis — Tech. Univ. Braunschweig
Wahl, Friedrich M. — Tech. Univ. Braunschweig

Open Discussion

Road/Lane Detection

- **How to deal with a huge variety of road surfaces, barriers & illumination changes**
  - Multi-class? How many?
  - Supervised or unsupervised?
  - Can we go fully supervised?
  - Can we go fully unsupervised?
- **How to detect small objects on road**
  - Cats, dogs, …
  - Drains, speed bump, …
- **How to navigate in narrow space with road detection**
  - Obstacles in close vicinity
  - Markings of parking lot
  - Different camera configuration?
- **How to cope with other object detection**
  - Car detection, pedestrian detection, …
- **How to use road/lane detection for ADAS**
  - Other than LKA, PCS, …

Benchmarking Road/Lane Detection

- **What data aspects are missing in KITTI-ROAD**
  - High variety in short range, nighttime, …
  - US, Japan, …
  - Interchange, junctions, …
- **How to achieve scientific progress/ comparability**
- **how to evaluate road-area best**
  - Pixel level? boundary?, ...
  - Appearance-based & Geometry-based separately
- **how to evaluate ego-lane best**
  - Exact boundary?, rough corridor? ,...)
- **what other road types might be relevant for benchmarking**
  - Side walk, traffic island,...
- **How does the camera system or effective range influence the algorithm?**
  - 20-40 meters
  - 80-100 meters
  - 500meters