세 미 나 안 내

1. 제 목 / Title : LiDAR data simulator and data selector tools

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3. 일 시 / Date : 2018-06-12 9:30~10:30

4. 장 소 / Location : IT1 313

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6. 강사약력 / Introduction :

2016 - Present: Postdoctoral researcher, Laboratory for Computer Graphics and Multimedia, Faculty of Computer and Information Science, University of Ljubljana, Slovenia.

2008 - Present: Teaching assistant, Faculty of Computer and Information Science, University of Ljubljana, Slovenia.

2018: Research exchange at KNU,

2016: Research exchange at Delft University of Technology.

2015: Staff exchange at Reykjavik University, Reykjavik, Iceland.

2014: Research exchange at Norwegian University of Science and Technology, Trondheim, Norway.

2008: M.Sc. exchange: Computer Graphics Design at Wanganui School of Design, New Zealand.

His main research interests are Computer Graphics, Game Technology, Data Visualization, Human Computer Interaction and Music Information Retrieval. His current research includes real-time medical and biological volumetric data visualization on web, visualization of geodetic data (LiDAR and Ortho-Photo) and high-energy physics experimental data visualization (in collaboration with CERN).

7. 내용요약 / Abstract:

The acquisition as well as annotation of real-life LiDAR and/or LADAR data is very time consuming manual task. This is especially true when we need large datasets for use with modern deep learning methods. Thus, we present an adaptation of a LiDAR (e.g. velodyne) sensor simulator adapted for acquisition of synthetic tracking data. The simulator allows use of different targets (smaller or larger drones, cars, birds etc.) in a simulated environment. The sensor can be put in a realistically modelled environment and can produce life-like output data. Such data can be automatically annotated, since the position of desired target is known throughout the simulation. The data generated with such si mulator can be used for training different machine learning models for detection, tracking and/or se gmentation purposes. Such simulation tool could be easily adapted for purposes of LADAR sensor d etection simulation as well.

The other tool we present is a LiDAR data selection tool developed in Unreal Engine, which presents the point-cloud data in visually very appealing way. This allows a user to easily select the desired parts/regions in the loaded data and label it. The tool was developed as a support tool for annotation of LiDAR terrain data acquired from airplanes.

In the end, I will also present other research we have been conduction in the Laboratory for Compu ter Graphics and Multimedia at Faculty of Computer and Information Science, University of Ljubljana.