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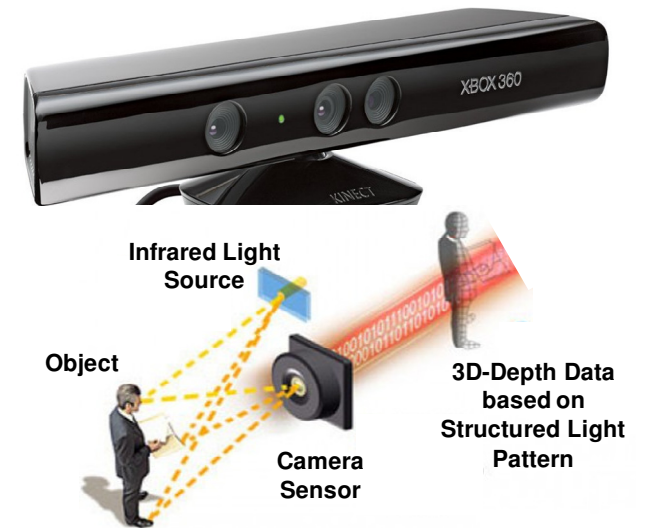
12. July 2011

Offer: Analysis and Simulation of MICROSOFT KINECT Sensor Characteristics using Ray Tracing

The versatile Microsoft Kinect sensor, developed by Microsoft for the XBOX 360, features a color camera and a 3D structured light sensor in a single, highly integrated device. It allows to accurately track in real-time the motions of humans and objects in a 3D environment at the hardware costs of a consumer market device.

Such highly integrated sensor concepts are also desired in the robotics and automotive field to implement functions related to human-machine interaction, autonomous navigation and collision avoidance applications.

Aim of this work is to analyze and simulate the characteristics of the Kinect 3D structured light and camera sensor regarding a collision avoidance application. The sensor simulation shall be done based on a novel Ray Tracing approach using the NVIDIA OptiX Ray Tracing engine running on a GPU. Testing will be done with a driving simulator software.



Source: Microsoft

Related Paper:

Fofi D, Sliwa T, Voisin Y. A comparative survey on invisible structured light. In: Price JR, Meriaudeau F, editors. Machine Vision Applications in Industrial Inspection XII. San Jose, CA, USA: SPIE; 2004 [cited 2010 Nov 13]. p. 90-98, http://pagesperso-orange.fr/fofi/Downloads/Fofi_EI2004.pdf

- Contact Address** : Dipl.-Ing. Erwin Roth; E-Mail: erwin.roth@in.tum.de
- Preconditions** : Experience in C or C++ programming, interest in Ray Tracing algorithms
- Start date** : **immediately**