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BTSS-BUYUKSAHIN tactile sensing system

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The desired level for tactile sensing in robotics and devices compared to the human's tactile sensing ability still could not be reached because there are 241 sensory receptors per centimeter square in human's tactile sensing and the acquired data is delivered to human brain without any data loss. But on the contrary the sensory receptors of robotics and devices for tactile sensing are at the number of tens per centimeter square and if total sensory number is increased to hundreds or thousands, the acquired data cannot be delivered to the computer properly or it will cost a lot. Due to our patented invention "Multi Point, High Sensitive Tactile Sensing Module for Robots and Devices" (US9030653B1), the number of tactile sensory receptors per centimeter square can be increased up to one million. The system also has the ability of temperature measurement in case needed. The key features of the system are as follows: System sends the gradual (not only I/O) tactile sensing data of each sensor individually and real time over a single USB cable which can reach up to total of 50 M+ sensor data with only 1 USB cable. System is constructed of all bendable materials which give us the chance of covering non-uniform shaped mechanical systems. As the tactile sensing and temperature data is transferred by light, the system does not interfere with magnetic fields. The system is built up with only over-the-counter components that are common and easy to provide.

Biography

Utku Buyuksahin received the BS and PhD degree in Mechanical Engineering from Yildiz Technical University, Istanbul, Turkey in 2004 and 2010 respectively. He received another BS degree in Business Administration in 2007. His main interest areas are; robotics, sensors, image processing and motion control. He has received many awards and has over 30 technical publications, including a book and a book chapter. He holds total number of 6 patented and patent pending inventions. He has accomplished over 70 projects (all mechanical designs, manufacturing, electronic designs and applications, software developments) including, 3 axes CNC Milling Machine, 6 DOF. Stewart Platform for 8D Cinemas, Vehicle simulators, 11 DOF. Hepa Filter Test Robot etc.

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