

Data set for recording the acceleration perception of 10 material surfaces Version1

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--The dataset recordings were used for a project for material classification: "Surface identification by an artificial finger using vibrotactile feedback"

--In this project, which was carried out at Hamburg University of Technology and lasted 3 months, 10 surface materials were sampled with a metal finger to which a 3-axis accelerometer was attached, and the acceleration of the finger on the surface of each material was recorded.

--The finger was controlled by a UR10e robot. The robot moved the finger at a speed of 20mm/s and the data was collected at a 8.33 khz rate for about 1.2 seconds.

--Each .csv file has 10k samples, and 5 columns. first one is the time stamps, next three are x(C1), y(C2) and z(C3) in that order.

--The fourth column has only 1 entry which is the surface code used in order to label the data.

--A small downward force of 3N was applied to ensure contact between the finger and material surface.

--Each texture was sampled 25 times (except styrofoam 24) resulting in 249 .csv files of accelerometer recordings.

--The recordings were performed using a Triaxial ICP® model HT356A44 from PCB Piezotronics.

--The recordings are in the form of volts (V). Refer to the datasheet of the accelerometer for V/g or V/mm/s² conversion.

-- The signals were amplified by a factor of 10 and connected to an oscilloscope. The csv files were directly obtained from the oscilloscope over USB flash drive.

-- Each .csv is named as <materialname><sample_no>.csv (except sandpaper, <materialname>_<sample_no>.csv

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