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Dynamic Foot Pressure Measurement System Using Optical Sensors

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Abstract : Foot pressure measurement provides necessary information for diagnosis diseases, foot insole design, disorder prevention and other application. In this paper, dynamic foot pressure measurement is presented for pressure measuring with high resolution and accuracy. The dynamic foot pressure measurement system consists of hardware and software system. The hardware system uses a transparent acrylic plate and uses steel as the base. The glossy white paper is placed on the top of the transparent acrylic plate and covering with a black acrylic on the system to block external light. Lighting from LED strip entering around the transparent acrylic plate. The optical sensors, the digital cameras, are underneath the acrylic plate facing upwards. They have connected with software system to process and record foot pressure video in avi file. Visual Studio 2017 is used for software system using OpenCV library.

Keywords : foot, foot pressure, image processing, optical sensors
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