

Circuit design and development of contactless sensor system for finger tracking in piano playing

Abstract

Piano technique is one of the main part of piano playing. Some researches had attempted to unveil the technique of virtuoso pianists using technologies. These researches employ different types of sensors in order to capture motion data of piano playing. However, one area in this research had been under-represented, which is finger position and pressure measurement applied by the musician while playing the musical instrument. Research that embark on this area faced a common problem, the sensors used in these research are directly in contact with the pianist, which causes a change of piano playing experience. Since piano playing consists of very delicate interaction between the pianist and the piano, such change of experience may affect the pianist's performance. These sensors are considered to be intrusive to the piano playing experience. Concluding the challenges faced by current technologies, a nonintrusive sensor is proposed and the circuit design of the sensor is discussed in this paper