Wearable handwriting input device using magnetic field. Geomagnetism cancellation in position calculation

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Abstract: In this paper an efficient technique using magnetic field is proposed for wearable handwriting input. This device requires mounting a permanent magnet onto fingertip and detecting the magnetic field generated by the magnet through magnetic sensors at the wrist of the other hand. The position of magnet is calculated by the vector of the magnetic field. And a method is proposed to avoid geomagnetic influence, using two magnetic sensors. Numerical methods are used to calculate the position of magnet with geomagnetism cancellation. Two numerical methods have been adopted and compared. A prototype device is made and we succeeded to get the trajectory of handwriting input character.
Author Keywords: Geomagnetic influence; Handwriting input; Magnetic sensor; Wearable device

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