

ABSTRACT

A WEARABLE LEGWEAR SYSTEM AND ARTICLE FOR DETECTING FOOT ANGLES AND DISTANCES

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The present invention relates to sensor-integrated socks designed to measure and monitor foot angles and distances in real-time. Each sock is embedded with multiple sensors, including gyroscopes and accelerometers, strategically placed at the heel (S1), midfoot (S2), and optionally near the toes (S3). The sensors collect

10 data on foot orientation and movement, which is transmitted wirelessly via a Bluetooth module to a mobile application. The application processes and displays the data, providing real-time feedback, historical data storage, and customizable alerts. The system includes a sports mode that adjusts thresholds based on physical activity, enhancing accuracy during static and/or dynamic movements.

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The socks are powered by a rechargeable battery and made from stretchy, breathable fabric for user comfort. This invention offers a non-invasive, cost-effective solution for managing foot conditions such as Metatarsus adductus.

FIGURE 1