



Journal of Sensors

Special Issue on
Mobile Sensing for Medical Applications

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The wide availability of smartphone sensors that have become ubiquitous in everyday life enables a wide variety of medical sensing applications. As the capability, accuracy, and reliability of these sensors have improved, so has research on using mobile sensors for applications such as diagnosing hand tremors using accelerometers, detecting the onset of skin diseases using cameras, and evaluating heart conditions using microphones, as well as a variety of other medical evaluation tasks.

The purpose of this special issue is to explore all topics related to medical mobile sensing, including that of smartphones, smart watches, or other body connected devices. In particular, research as well as review papers that focuses on how mobile sensing is improving medicine, enabling better care and better diagnostics, or leveraging the potential for analyzing data on a very large scale, are most welcome.

Potential topics include, but are not limited to:

- ▶ Design or application of novel mobile sensors for medical applications including new types of cameras, vibration sensors, and other medical sensors
- ▶ Utilization of existing sensors towards medical applications including but not limited to diagnosing and analyzing hand tremors, heart conditions, and skin conditions
- ▶ Condition-specific application of mobile sensing, including diagnosing tremors, visual evaluation of skin lesions and moles, visual evaluation of eyes, diagnosis of medical issues through gait tracking, and any other application where mobile sensors are used in the evaluation, assessment, or the treatment of medical conditions
- ▶ Exploration of the limitations of existing sensors including sensor detection limits, sensor inaccuracies, and quantitative evaluation of sensor variations across different mobile devices
- ▶ Availability of public medical databases for sensor signal processing research and validation
- ▶ Algorithms that leverage large-scale data towards obtaining a better understanding and modeling of different medical problems, including deep neural networks and deep belief networks
- ▶ Reviews of the existing state of the art in mobile sensing for medical applications
- ▶ Case studies focusing on the clinical use of mobile sensors for aiding expert assessments and evaluations

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