TECHNOLOGY

Methods and Apparatus for Cuffless Blood Pressure Measurement

OVERVIEW

Background:

Hypertension affects ¼ of the world's population and is a major risk factor for stroke and heart attack – two world leading causes of death. Current hypertension diagnostic resides in-clinic and is performed by the patient's physician. With roughly 20% of hypertension patients not knowing they have it, and due to high variability in current blood pressure (BP) measurements/measurement techniques, there is a high interest in ubiquitous BP monitoring capabilities. Current ubiquitous BP monitoring technology, overall, does not detect hypertension well enough and thus, having a more effective and out-of-clinic measurement technique that can be used by the mass population will provide a more rapid detection of hypertension and provide better hypertension control.

Innovation:

Researchers at the University of Maryland in close collaboration with Michigan State University have developed a novel, out-of-clinic way to measure blood pressure and determine if the patient has hypertension. The device itself monitors patient's BP using standard oscillometric principles and an underlying finger pressure transducer and volume sensor that can be incorporated into a smartphone and an associated smartphone app for visual display. The unique technology provides patient specific monitoring by using a mathematical model around the standard oscillometric BP estimation coupled with population-based algorithms to build a ubiquitous algorithm that yields a more accurate and reliable patient specific algorithm.

APPLICATIONS

· Blood pressure monitoring
· Hypertension diagnostic
· Smartphone diagnostic

ADVANTAGES

· Out-of-clinic [BP monitoring]
· Patient specific
· Smartphone compatibility
· Quick diagnostic
· Cost effective
· Low pressure errors

CONTACT INFO

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

CATEGORIES

- Devices
- Diagnostics
- Bioengineering
- Software + Algorithm

EXTERNAL RESOURCES

- US Patent 10,136,823 %

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