



Medical Technologies and Devices

Problem

Blood pressure monitors are invasive and do not monitor continuously. Devices that have continuous monitoring capability have low patient compliance rates due to size and discomfort.

Technology

This technology is a self-training continuous blood pressure monitor which measures multiple medical signs continuously, including blood pressure, heartrate, heart rate variability, SpO₂, perfusion index and optionally ECG.

With each cardiac cycle, blood is pumped to the body's periphery. Although the flow is damped by the flexibility of human tissue, blood flow is not constant and can be observed as a pressure wave. This pressure wave can be monitored non-invasively through photoplethysmography (PPG) sensors. PPG illuminate the skin and measure changes in light absorption induced by varying blood flow, therefore measuring blood volume changes.

The developed technology consists of the main features:

1. A provision to accurately monitor blood volume changes and timings from fused mechanical, motion and optical sensors in multiple locations.
2. A provision to actuate blood flow in one location while observing the impact on the second location.
3. A machine learning method fusing the information and processing it into multiple medical signs.

Commercial Opportunity

Potential application areas include:

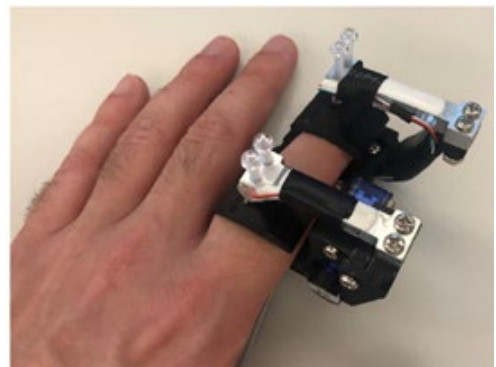
1. Blood pressure monitors
2. Pulse oximeters
3. Activity trackers
4. Fitness trackers
5. Sleep oxygen monitors
6. Heartrate monitors

Inventors

This technology was developed by Associate Prof. Simon Poon and Dr. Anusha Withana.

Intellectual Property Status

This technology is the subject of an Australian provisional patent application titled: Self-training continuous blood pressure monitor (2022901774).



Non-miniturised actuating blood pressure monitor prototype

Contact Us

Dr Stephen Lam

Commercialisation Theme Leader - Science
Stephen.lam@sydney.edu.au
T: +61 2 8627 5983

Commercial Development & Industry Partnerships
The University of Sydney
T: +61 2 9351 4000
Sydney.edu.au/cdip