NOHAYO

Smart Solutions for Wearables

Cardiorespiratory Library

Continuous Oxygen Saturation Algorithm

Nohayo has developed a robust algorithm to calculate and track Oxygen Saturation (SpO_2) using Red and IR PPG signals from any body location. The solution can be implemented on any kind of wearable device that contains Red and IR PPG optical sensor.

The SpO_2 algorithm has a **medical grade accuracy** and the device implementing it can be FDA or CE cleared.

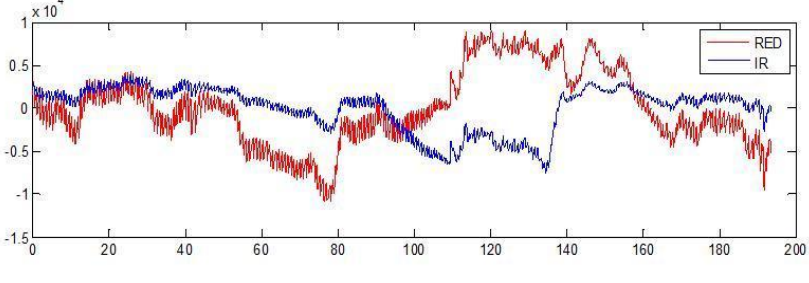
The uniqueness of Nohayo's solution

Extracting SpO_2 from the finger tip using a transmissive PPG sensor is relatively straightforward. However, Extracting SpO_2 from other body locations that has lower blood flow such as the wrist and using a reflective PPG sensor is much more challenging.

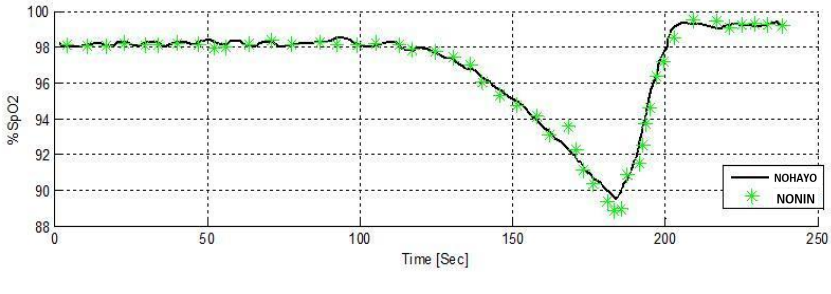
Nohayo applies recursive reconstruction techniques to enhance the SNR of the PPG signals and thus ables to extract robust SpO_2 from challenging body areas such as the wrist.

Nohayo Oxygen Saturation algorithm performance

The SpO_2 algorithm is implemented in embedded C and can run on wearables like a smartwatch, ring, and earbuds that has a PPG, an accelerometer, and a DSP unit.



The algorithm (wrist device) was compared to a NONIN FDA cleared finger device, and showed high Pearson correlation coefficients of r=0.953 (38 healthy participants aged 23-56 years, oxygen saturation ranging from 100%-70%).



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