



IntelliHearts

Type of organization

AI, Bid data application/ digital health solution supplier

Headquarters (country)

Italy

Maturity Level

In development

Organization description

IntelliHearts aims to democratize and decentralize access to medical technologies providing high accuracy in health services to affordable smartphone and wearable devices.

We do so not bypassing the health professionals, but providing them with new tools. We want users to be able to interact independently and from the comfort of their own home. Moreover, this approach ensures continuous monitoring of vital parameters, useful to the patient to better understand and contextualize their health and to caregivers to have access to data and parameters previously inaccessible.

Solution/service description

Long term monitoring and a personalized approach are the goals medicine is looking for. IntelliHearts' algorithms (through API) can analyse and monitor the raw data, collected by the wearable sensors, and send notifications in case of variations. This will help the users to better understand their own health, thanks to a patient-centric approach, and improve the early disease detections for a better outcome. Thanks to Machine Learning and Artificial Intelligence algorithms, IntelliHearts aims to democratize and decentralize access to medical technologies providing high accuracy in health services to affordable smartphone and wearable devices. Moreover, this approach ensures continuous monitoring of vital parameters, useful to the patient to better understand and contextualize their health and to caregivers to have access to data and parameters previously inaccessible.



The sensors we use are:

- Pressure
- Oxygen saturation
- Heart rate
- Single-derivative ECG
- Sleep analysis
- Microphone

Features/product description

We are experts in signal denoising, so we are able to obtain high quality results, even from affordable sensors, making IntelliHearts compatible with several different kinds of devices.

When the ECG, PPG, and audio tracks are acquired through the smartphone microphone, our algorithms can recognize anomalies and patterns from these tracks.

From these raw values, IntelliHearts can improve its accuracy and extrapolate new ones:

- ECG (Classification of beats TRL4ML-6): Detection of atrial fibrillation beats and arrhythmias such as bradycardia, tachycardia, fusion beats, ventricular and supraventricular ectopic beats and respiratory rate value. These beats are recognized with an accuracy that reaches 95%, this result places us among the major players in the world in this sector. First publication on this topic done by PhD Dentamaro, member of our team is dated 2018;
- Audio analysis (TRL4ML-4) [microphone required]: recently we have approached the development of new neural networks that we have called AUCOResN to recognize some respiratory diseases from audio tracks. At the right moment, we are the only ones in the world who can return 96% in accuracy in distinguishing whether a user has COPD or not;
- Emotion detection: we can detect the emotional state of the user, just analysing the ECG values, based on scientific work ;
- AI vital parameters evaluation: The app creates charts of vital signs (heart rate, blood pressure and blood oxygenation) and is set to learn the user's standard values, that becomes as long as it is used. Even more, our app can notify the user (and/or his/her favourite contacts) about any significant variation in the personal health values, adding the GPS position in case it would be useful to intervene.

Communit of interest
eGATEKEEPER Hub
Digital health
companies



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