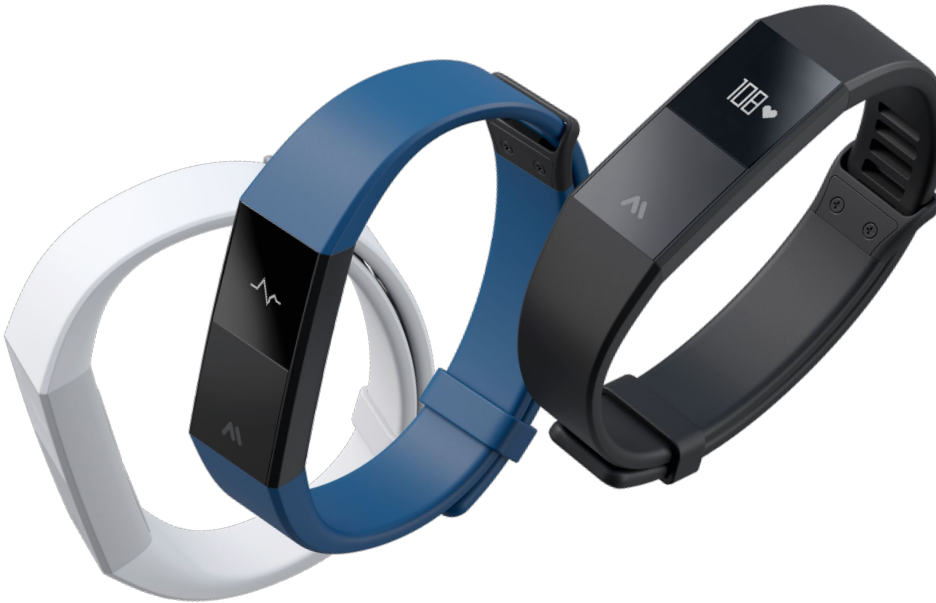
RESEARCH PLATFORM

Automatic Heart Attack detection



Problem

Every 40 seconds, someone in the United States has a heart attack

That's a huge number yet there is no widespread solution for effective detection of ECG patterns preceding Heart Attack outside of the hospital.

26.5% of heart attacks victims in the US are people that had a heart attack before

There are 210,000 such cases each year. So there are a lot of people in dire need of such of a solution for accurate heart attack detection.

One of 5 heart attacks is silent — the damage is done, but the person is not aware of it.

That means that a convenient way to record the patient's ECG outside of the hospital is the only way to reliably detect the heart attack in 20% of all cases.

Source: Benjamin EJ, Blaha MJ, Chiuve SE, Cushman M, Das SR, Deo R, et al. Heart Disease and Stroke Statistics—2017 Update: A Report From the American Heart Association. 2017; 135:e1–e458. DOI: 10.1161/CIR.0000000000000485.

Automatic Heart Attack detection - Roadmap

All statistics mentioned before makes creating ways of automatic detection of ECG patterns preceding Heart Attack outside of hospital a huge challenge for modern medicine. The following should be done to create such a system:

ECG patterns that precede Heart Attack are well known, but to create the system for detection of this patterns a lot of data of patients with heart attack is needed. Then we will use this data to train the AI-based system. This should take around 6 months to be completed.

After this system is created a trial on hospital patients is needed to count practical accuracies and understand the possibility of use the system outside the hospital. This trial also may take around 6 months but it can be started before first stage is finished.

After such trial system depending on the results system can be either improved or be used to create a practical product.

On the initial stage in some countries the product may be used without medical certification - as a recommendation system for the patient. But the main goal is to get it CE and FDA certified to make it part of standard heart attack prevention guidelines.

Automatic Heart Attack detection - What we need

Our first challenge is data collection.

For proof of concept at least 1000 samples of ECGs of different people with heart attack ECG patterns are needed.

Even more data will be needed after PoC

To create a system for use in hospitals we may require even more data - around 10000 samples, but to understand how much data is needed exactly first stage should be completed.

Automatic Heart Attack detection - What we need

We need assistance of highly qualified medical researchers to maximize the results of clinical trials.

At least 500 subjects in different hospitals are needed.

Assistance with CE and FDA

Your practical experience and assistance on the global certification phase will be valuable and appreciated.

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Feel free to contact us and join this research!

research@mawi.band