Wearable Healthcare

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CURRENT RESEARCH

Using biosensors to monitor health

Imagine a world in which healthcare decisions are made not only through observation of macroscopic symptoms at infrequent doctor's office visits, but are instead made together with the help of data collected from sensors that continuously monitor underlying physiology.

This approach to healthcare can be imagined similar to the way we now care for our cars. Today, we still need to bring our vehicles in for periodic oil-changes and check-ups with a mechanic, just as we do with our doctors. Decades ago, this was the only opportunity for your mechanic (doctor) to spot a potential problem and rectify it. Unfortunately, as many of us have found out, many automotive problems do not exhibit symptoms that are visible during routine check-ups, and instead only arise when it is too late; for example, your car is overheating on the side of the road. Fast forward to today, most new cars have hundreds of sensors that help to detect these problems before they are even visible to your mechanic. Your car will now notify you of a potential problem, and suggest a visit to your mechanic to preemptively address the problem. Unfortunately, the idea of preventive care has not yet been translated to healthcare in a truly meaningful way.

- The principal idea is this: let's outfit patients with biosensors that monitor the status performance of their bodies such that they can ensure they are living optimally, and preemptively address minor issues before they become major ones.
- The Energy-Efficient Microsystems lab at University of California, San Diego, believe outfitting of patients with sensors has not yet happened due to current sensor...

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AFFILIATION

University of California, San Diego

EDUCATION

- Ph.D. in Electrical Engineering and Computer Science, 2012 ,Massachusetts Institute of Technology

AWARDS

- Graduate Teaching Award

RESEARCH AREAS

Health & Wellness, Wellness, Aging Research

FUNDING REQUEST

Your donations will help Energy-Efficient Microsystems lab at UCSD, strive to design and develop biomedical sensors that are completely autonomous: that is, they can power themselves from ambient energy, and securely communicate with minimal setup required to a device like a smartphone or smart watch. In this manner, we can begin to integrate many sensors into your smart watch, your clothes, or even in your car seat or office chair. Eventually, we may also look to implant important sensors into the body.