



Inventors

Dr. Sandeep Gupta

Associate Professor
School of Computing,
Informatics, and Decision
Systems Engineering

Dr. Ayan Banerjee

Postdoctoral Research
Assistant
School of Computing
Informatics and Decision
Systems Engineering

Intellectual Property

Status:

Pending

Contact

Bill Loux

Director of Business
Development, Physical
Sciences

Arizona Technology
Enterprises, LLC (AzTE)

P: 480.884.1992

F: 480.884.1984

BLoux@AzTE.COM

TECHNOLOGYVENTURES@AZTE.COM

bHealthy: A Physiological Feedback Based Mobile Wellness Application Suite

AzTE Case # M14-055P

Background

Managing personal health and wellness has been proven to increase productivity and lower stress, and smartphones have become an essential tool in this practice. Currently, there are a wide array of devices for tracking motion, heart rate, temperature, and even perspiration. While the more expensive products have multiple sensors, no device detects actual physiological signals such as those from electrocardiogram (ECG) and electroencephalogram (EEG) readings. Moreover, each of these devices come with their own, individualized software that cannot interface with other devices or applications, nor communicate with the medical cloud.

Invention Description

Researchers at ASU have developed bHealthy, a physiological mobile wellness application suite for Android. The bHealthy suite has a reporting and suggestion module that is supported by two health monitoring apps, PETPeeves and BrainHealth. PETPeeves uses an accelerometer, ECG sensors, and a smartphone's GPS to monitor heart rate, calculate calories, and track distance during exercise. PETPeeves' user interface includes a virtual pet whose mood varies depending on the amount of exercise the user performs each week. Using an EEG sensor, BrainHealth trains the user to focus, change their mood, or relax. For each training activity, the user concentrates on keeping a glob of goop together in the center of their screen, and the glob breaks apart if the user loses concentration. All the while, bHealthy logs the user's physiological and mental performance in a database that is shared remotely with authorized applications and transmitted to the medical cloud. bHealthy routinely generates wellness reports based on the user's performance and suggests activities for improvement. bHealthy can also collaborate with other applications tailored to the user's additional wants or needs.

Potential Applications

- Health and Wellness Apps
- Mobile Healthcare Monitoring

Benefits and Advantages

- **Accurate** – Uses actual physiological signals to evaluate the physical and mental states of the user.
- **Customizable** – Collaborates with additional applications suited to the user.
- **Engaging** – Provides visual animation as well as a detailed report as feedback.
- **Versatile** – Interfaces with any accelerometer, ECG, and EEG sensor.