Multimodal food journaling

Tech ID: 30080 / UC Case 2019-217-0

BRIEF DESCRIPTION

Researchers at UCI have developed a hands-free, unobtrusive smartphone-based application for automatic food journaling. The app, which operates via voice command, is interactive and highly engaging thereby encouraging long-term user participation.

FULL DESCRIPTION

Research from the National Institute of Health has shown that people who keep track of what they eat are more likely to undergo and sustain substantial weight loss than those who do not. Additionally, several medical organizations including the American Heart Association and Cancer Society recommend regular food tracking as a method of reducing the risk of future disease. In addition to cardiovascular disorder and cancer, unhealthy dietary habits are also linked to kidney disease, diabetes, musculoskeletal disorders, and, more generally, obesity. Notwithstanding the benefits offered by regular food journaling, it is often a tedious undertaking. Even apps like MyFitnessPal, which automatically estimates nutritional information from different types of food, still require the user to manually open the app and search through the database. Despite its estimated 165 million downloads, which demonstrate a clear public interest in automatic food journaling, MyFitnessPal typically has only 19 million active users per month, a less than 10% engagement rate. Even consistent users will still inevitably forget to log meals on occasion, making the standard food journaling practice incomplete and even inaccurate in the best of cases.

To overcome low user engagement and inaccurate recordings, researchers at UCI have developed a novel smartphone application for automatic eating recognition and hands-free food journaling. The app, which is linked to a wearable device such as an Apple Watch or FitBit, uses contextual clues such as heart rate and activity level to identify when a user begins eating. It then gently vibrates the wearable device, reminding users to log the contents of their meals. At this point, the user needs only to state out loud what they are eating, and the app automatically logs the contents of the meal and its nutritional information. By requiring minimal effort from users and actively reminding them to chronicle their meals, the app encourages long-term user engagement.

SUGGESTED USES

For automatic and continuous food journaling

ADVANTAGES

» *Automatic and unobtrusive*: The app uses contextual clues to automatically recognize when a user begins to eat.

» *Hands-free*: By simply stating aloud what they are eating, the app automatically logs meal content.

» *Engaging*: The voice-command-based nature allows the user to interact directly with the app, which encourages continued user participation.

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OTHER INFORMATION

CATEGORIZED AS

- **Computer**
  - Software
- **Medical**
  - Devices
  - Other
  - Software
- **Engineering**
  - Other

RELATED CASES

2019-217-0, 2018-228-0

» *Accurate*: Over the course of three months of regular use, the app had trouble identifying only a handful of food items.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	11,594,315	02/28/2023	2018-228

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