“MT-Diet: Automated Diet Assessment using Myo and Thermal”

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Healthy Diet App: MT-Diet

Background:
- Obesity is known to be a cause for many health conditions (diseases)
- Diet monitoring to prevent and treat obesity efficiently and effectively

Previously:
- Self Reporting
  - Recall Error, under-Reporting, Low adherence
- Camera based approaches
  - Good identification accuracy for whole food such as fruits
  - Very poor accuracy for cooked food (63%)
  - Requires manual intervention from user

MT-Diet:
- Automatic diet assessment by one button click
- Improved cooked food identification accuracy (88.93%)
MT-Diet Architecture

Step 1: One Click Thermal and Visual Image
Seek thermal sensor interfaced with Nexus 5

Step 2: Eat Prescribed Amount from Each Food Item

MT-Diet Android application

- Segmentation
- Identification
- Quantity and type of Food intake

- Accelerometer
- Gyroscope
- Electromyogram
- Gesture Recognition
MT-Diet Evaluation

Food Segmentation: 97.5%
- Effectively isolating just segments of food from the image
- 78 out of 80 cooked food portions extracted perfectly

Food Identification: 88.93%
- Identifying food types using segmented food
- Support Vector Machine with Kernel, KPCA, Feature fusion, K-fold cross validation

Food Consumption: 91.37%
- Automatic diet assessment at the end of meal
- Real time feedback on eating habits
Thank You

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