Detecting Personality Unobtrusively from Users’ Online and Offline Workplace Behaviors

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Motivation

**Personality matters**
Personality affects various social behaviors of an individual. Thus, many companies utilize personality tests to know employee’s personality for team collaboration, employee role identification, and performance analysis.

**Existing personality assessment methods**
- Self-assessed personality tests
  Limitations: Self-report bias, repetitive burdens for periodic reassessment
- Automatic Personality Assessment (APA)
  Limitations: Explicitly require users to perform specific tasks, inapplicable in practice due to privacy concerns

Method

- Detect user’s personality *ambiently* and *unobtrusively* by analyzing workplace behaviors.
- Analyze both online and offline behavior data, since analyzing single channel may partially represent one’s personality.

Online behavior data
- Online messenger logs of 4 different research groups (total 37 users) at KAIST over 5 months
- Extract 4 different online social behaviors:
  - Behavior 1) Sending a text message: (a), (c), (d)
  - Behavior 2) Reacting to others: (b)
  - Behavior 3) Replying to others: (c)
  - Behavior 4) Initiating a conversation: (d)

Offline behavior data
- Pilot study with recorded video of one research group (total 12 users) at KAIST for 4.5 hours
- Extract 3 different offline movement behaviors:
  - Behavior 5) Visiting common area
  - Behavior 6) Passing workplace door
  - Behavior 7) Staying at one’s seat

Result

- Behavior 1, 2, 4 showed positive correlations, and behavior 3 showed negative correlation with extraversion
- Confirmed possibility of detecting extraversion indirectly from one’s movement in workplace
- Offline data showed complementary result with online data

Future Work

**Analyzing more online & offline behavior data** - (1) Internet browsing data to extract online behaviors, (2) Automatically collected indoor movement data using beacons to extract offline behaviors

**Possible Applications** - (1) Personality-aware mediator bot for managing informal communication, (2) Assisting balanced workplace communication via real-time feedback

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