

Personality Prediction Using Social Networking Sites

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Overview

- Introduction to personality and personality traits
- Proposed Project
- Technical details
- Areas of Application
- References

Introduction

- What is personality?
 - “The combination of characteristics or qualities that form an individual's distinctive character” - google
 - “Personality is the particular combination of emotional, attitudinal, and behavioral response patterns of an individual” - wikipedia
 - Personality is usually broken into components called the **Big Five**, which are also known as **personality traits**. These components are generally stable over time and appear to be attributable to a person's genetics rather than the effects of one's environment.

Personality Traits

- **Neuroticism**

- Related to emotional instability, represents the tendency to experience negative emotions and a lower tolerance to stress.

- **Extraversion**

- An individual's preference for outgoing social experiences, while the opposite(introversion) is a desire for a lower level of social involvement.

- **Openness**

- An individual's curiosity and appreciation for new experiences; the converse would be a greater respect for traditional and well-traveled experiences.

- **Agreeableness**

- A tendency towards compassion and cooperation, while the opposite is a prevalence of suspicion and antagonism.

- **Conscientiousness**

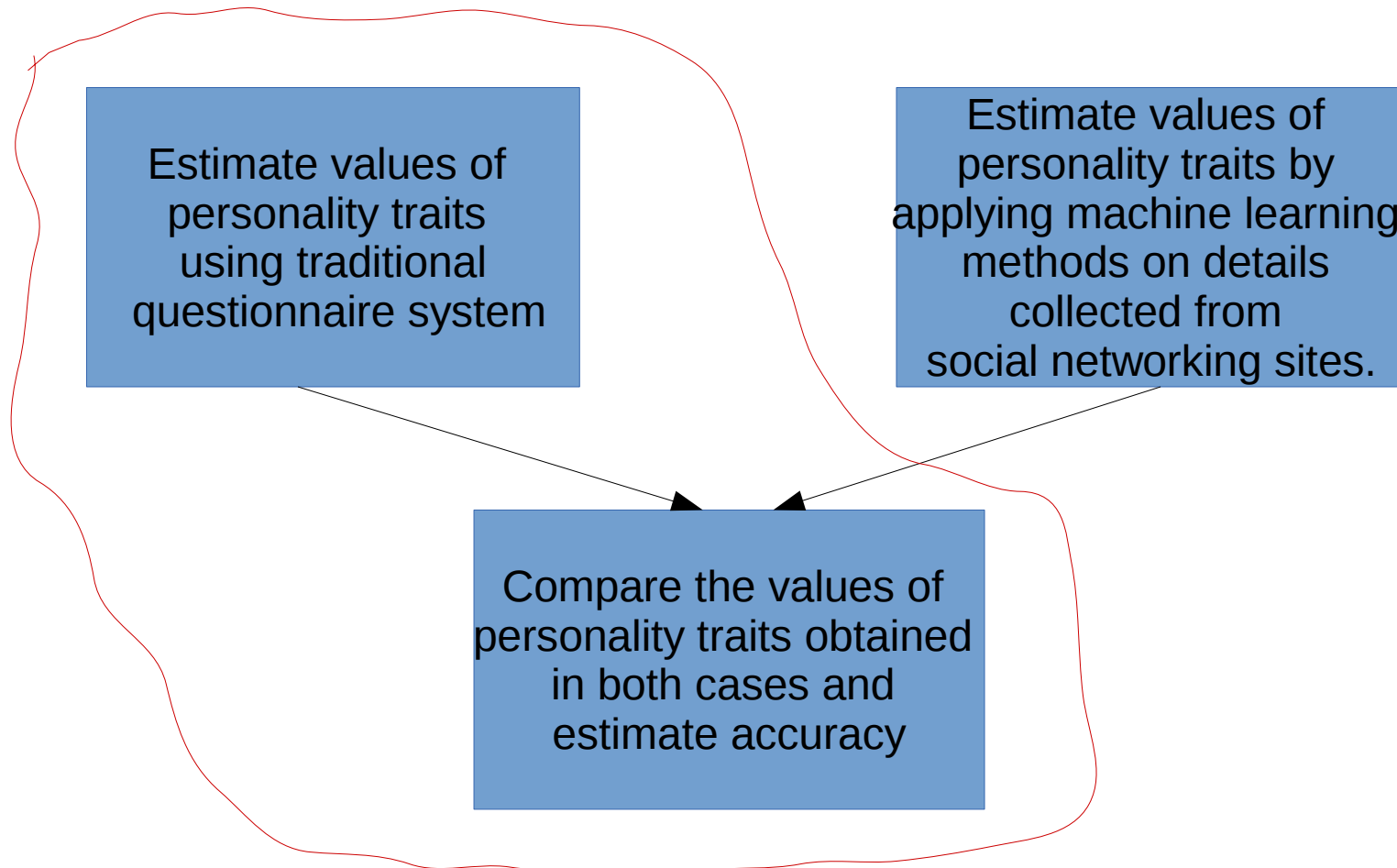
- Shows an individuals' self-discipline and devotion to duty; a lack of conscientiousness would be an increase in spontaneous and unplanned behavior.

Proposed Project

- Develop a facebook app to predict the personality of individuals by analyzing their preferences, activities and interactions in facebook.
- Predict the personality traits with an accuracy more than 60%.

Technical Details

- Proposed project will be containing two components at initial stage of development.



Technical Details(contd.)

- Traditional method for estimating values of personality traits
 - There are several questionnaires available for estimating personality traits. We will be using 44 item inventory. It consist of 44 questions with 5 point scale in the following way.
 - Strongly Disagree
 - Disagree
 - Neither agree nor disagree
 - Agree
 - Strongly Agree
 - These questions have direction or inverse proportion with different personality traits. Personality traits are estimated by finding average of score on respective questions

Technical Details(contd.)

- The second component is about using machine learning method for estimating values of personality traits.
- Machine learning method can be briefed into following steps
 - 1) Extraction of all features
 - 2) Processing of textual content obtained from facebook (such as status updates, comments, self descriptions ..etc) using tools like LIWC[9] and NLTK[10] to get additional features
 - 3) Perform Pearson's correlation analysis to find whether there is a strong correlation between different features and personality traits and eliminate features having correlation coefficient below a particular limit.
 - 4) Perform regression analysis in Weka[8] with a good regression algorithm(Gaussian Process or ZeroR) and form equations to estimate values of each personality traits.

Technical Details(contd.)

- Available features

<u>Type</u>	<u>Examples</u>
Internal facebook statistics	User id which corresponds to joining time of user, time of last profile update, number of notes, url of profile pic,...etc.
Personal information	Age, Sex, Education level, Geographic location.. etc
Activities and preferences	Favorite movies, shows, music, book, quotes, political interests.. etc
Language features.	Status updates, comments, self description.. etc
Structural features.	Interaction with friends, number of message transfers... etc.

Areas of Application

- Online marketing system can recommend product in personalized way by analyzing individual's profile in Social Networking Sites.
- Instant feedback: there are no questions at all and you get a score in a matter of milliseconds!
- Real world validity: we look at your actual Facebook behaviour rather than asking you about your real-world behaviour
- Difficult to fake: in traditional testing, people often misrepresent who they really are (even if they do not mean to). By observing actual records of behaviour and choices you made in the past, we largely circumvent the opportunity to 'cheat' the assessment

References

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Questions??