

Personality Prediction based upon Big Five Personality Traits using Logistic Regression

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Abstract

To find out how people lead, influence, communicate, collaborate and negotiate business, personality is very useful. Personality comes under one of the most important features used to determine how people interact with outside world. This project is helpful when the personal behaviour comes in the play in the corporate world. On the basis of the data collected by the system, organizations can identify person based on personality traits. This collected data will be stored in database. User's personality characteristics are examined in database so that system can detect the user's personality. The data stored in database is used to classify person using Automated Personality Classification (APC) and using this classification we can predict or classify personality of user. Social networks, ad selling online networks who wants to sell more relevant ads, organizations and other companies who wants to recruit applicants based on personality of their employees can use this system. In this project, we propose a system which will be used for analysing the personality of the applicant and give out the results.

Keywords: -Personality, Classification, APC, Personality Traits.

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1.0 INTRODUCTION

Traditional Styles of relating personality of person by their nature are time consuming and limited in scale. In traditional styles data is only anatomized using data collected from colorful sources. Predicting personality through this anatomized data without using personality traits is delicate and we cannot prognosticate exact personality of person. Our aimed System will give information about personality of person grounded on personality traits. System will match the personality traits with the data stored in the database and system will classify personality and will match the pattern with the stored data. Also, System will descry personality of the stoner. In this design we've used supervised machine learning algorithm. The Personality Prediction System through questionnaires is a methodological approach aimed at assessing and predicting an individual's personality traits based on their responses to a set of carefully designed questions. This approach leverages established psychological theories and models to gain insights into an

individual's behavioral patterns, preferences, and tendencies. The process typically involves administering standardized questionnaires or surveys that cover a wide range of personality dimensions. One of the most widely used models in this context is the Big Five personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. These traits provide a comprehensive framework for understanding various aspects of an individual's personality.

2.0 LITREATURE SURVEY

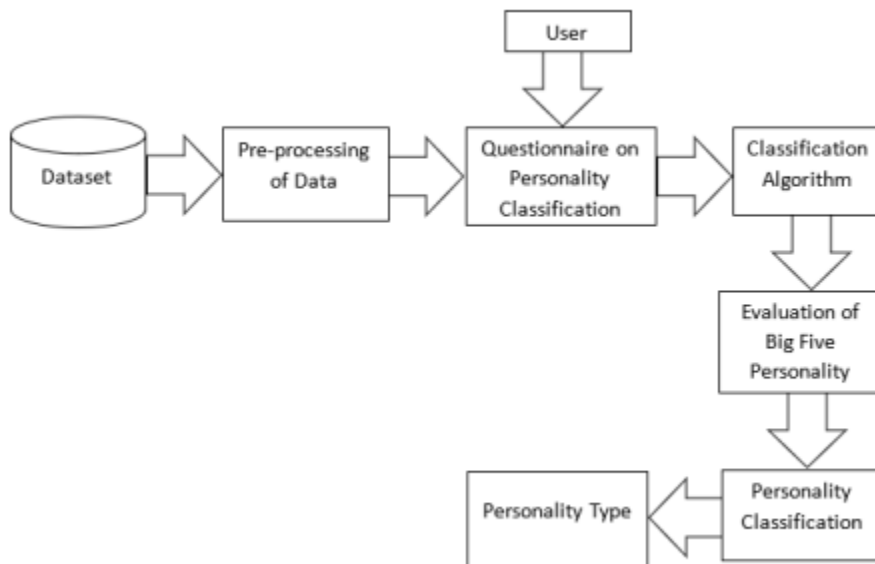
Paper 1: Personality Vaticination Using Machine Literacy In Devesh Agarwal, Mr.M.Karthikeyan (3) One of the major challenges for the design will be the collection of input datasets for the algorithm. For conducting the test, we're using K – Mean Clustering Algorithm. The dataset for testing the algorithm is collected from the party. This is done by giving a questionnaire on personality bracket. also, the collected information is fed to the personality bracket algorithm i.e., K- Mean Clustering Algorithm. Eventually, the algorithm evaluates the data on the base of the big five personality traits and displays the result. To give you an idea, then a diagrammatical representation of the whole process we will follow for the conduction of the design.

Paper 2: Friend Recommendation System Grounded On Five Personality Test In SaharouiDhelim, And NyothriAung (2) In the literature of social networks, numerous FRSs have been proposed the Friendbook, an FRS that's grounded on semantic technologies, Friendbook recommends musketeers to druggies grounded on their cultures rather than social graphs, Friendbook identify cultures from stoner smartphone detector data, after detecting their cultures, it recommends musketeers that have analogous cultures.

Paper 3: Personality Vaticination From Social Networks Text Using Machine Learning MamtaBhamare,K. Ashok Kumar(1) The purpose of this paper was to present a review of current work related to personality identification using online social networks or stoner written textbook and to identify unborn directions for personality vaticination exploration. As a result of our check, we've performed analysis of colorful styles or ways that are used for personality prognostications. We gave an overview of the multiple inquiries carried out from social networking biographies to automatically identify personality. We mentioned the dataset and methodology used for each of the exploration, followed by a debate of their main findings. We've also presented different unborn directions that could be useful for exploration.

Paper 4: Automated Personality Classification Using Big Five Personality Traits. V. Mamtha, Y. Harika, G. ShrinivasaPriya, Ch. Lakshmi Priya, S. Tejesh. This paper is about different machine learning algorithms used for personality identification using personality traits. This paper descirbes relationship of user and his/her personality. This system is used to save time which is needed to take inerviews.

3.0 SYSTEM DESIGN



1. Data Collection: First Step is to collect data to decide training and testing dataset. Data in dataset is pretrained or classified based on personality traits so that when user enter new data system will able to predict.

2. Feature Extraction: To pretrain the model, for personality prediction we are going to extract new features from collected dataset

3. Classification Of Data: Data collected from answers of questionnaires given by user is classified using various machine learning algorithms into various personality traits based on past classification

4. Personality Classification: After classifying users' data into various personality traits system will predict the personality of user.

4.0 METHODOLOGIES:

Logistic Regression –

Data Preparation: Gather a dataset that includes observations of individuals with their corresponding Big Five personality trait scores. Each observation should have a set of input features (e.g., demographics, behavioral data) and the corresponding labels (scores for each personality trait).

Data Preprocessing: Preprocess the dataset to ensure it is suitable for training a logistic regression model. This may involve handling missing values, encoding categorical variables, and scaling numerical features. Additionally, split the dataset into a training set and a test set.

Feature Selection: If you have a large number of features, consider performing feature selection to identify the most relevant ones for personality prediction. Techniques like correlation analysis, mutual information, or recursive feature elimination can be used for this purpose.

Model Training: Train a logistic regression model using the training set. Logistic regression is a binary classification algorithm, so you would need to train separate models for each of the five personality traits. For each trait, you'll have a binary outcome (e.g., high/low score) based on a predefined threshold.

Model Evaluation: Evaluate the trained logistic regression model on the test set. Common evaluation metrics for classification tasks include accuracy, precision, recall, F1 score, and area under the ROC curve (AUC-ROC).

Model Optimization: Experiment with hyperparameter tuning to improve the performance of the logistic regression model. Techniques like grid search or random search can be used to find the optimal combination of hyperparameters.

Model Interpretation: Logistic regression models provide interpretable coefficients for each feature. Analyze these coefficients to understand the impact of different features on personality prediction.

Deployment: Once satisfied with the performance of the logistic regression model, you can deploy it to make predictions on new, unseen data. Ensure that the input features for the new data are preprocessed in the same way as the training data.

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