

Personality Predictor Using Factor Analyser

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Abstract: Competitiveness in the present period has led to a great need for increased productivity. The productivity of a person can be measured by geste. Personality is an existent's characteristic patterns of thinking, feeling and acting across a wide range of situations. It affects how we make opinions, break problems, handle conflicts, deal with politics and manage with stress. The study of personality is pivotal in psychology, as it helps to understand how people interact with each other and the world around them. The personality of a mortal plays a major part in his particular, professional life. The exploration proposes a approach to measure the Big- Five personality traits using a set of questions. Five characteristics of different individualities generally known as big five characteristics videlicet, openness, neuroticism, meticulousness, affability and extraversion are stored in a dataset. The stoner is asked to answer a many questions, and the system predicts their personality grounded on the responses. This system allows for a quick and accurate assessment of personality, and it can be done in real-time, making it more accessible and cost-effective. The findings of the operation may have practical operations in relating suitable campaigners for job positions, marketing strategies and developing personalised interventions for individualities with specific personality traits. It can be used to match connubial biographies. The results of this study could have counteraccusations in colorful fields, similar as hiring and reclamation, personality development, and psychotherapy.

I.INTRODUCTION

At its utmost introductory situation, personality refers to the internal, emotional, and behavioral characteristics that discern one factual from another. numerous ultramodern-day persona psychologists agree with that there are 5 confines of character, regularly known as the "monumental 5 traits" or "

OCEAN" model. "The five broad personality trends

described with the aid of the proposition are extraversion(also constantly charmed extroversion), affability, meticulousness, and neuroticism". Music is an imperative portion of our reality. We pay attention to the mundane in agreement with our preferences and cheers. With the rapid-fire- conflagration- fire- fire- conflagration elaboration in the measure of virtual data, people's capability to concentrate on colorful mores of music has also greatly extended. As a result, the want to deliver the voguish music to listeners has been a fascinating field of exploration in computer technology. One of the most important ministers in delivering a nice song to listeners is his or her persona particularity. In this charge, we thing to discover the effect of character tendencies at the cooperative filtering(stoner to consumer) that's one of the ultimate popular recommendation motors exercised directly. In order to get a person's personality, valuations of monumental 5 traits can be taken as input to the machine knowledge model which will prognosticate the person's personality. "Personality traits of the addicts can be studied in tenures of standard-issue- conclusion- conclusion monumental five personality traits outlined as outspokenness to experience, meticulousness, affability and Neuroticism". The word persona comes from the "Latin word Persona", which refers to a dramatic mask worn by a person. Music is an imperative portion of our reality. We pay attention to the mundane in agreement with

our preferences and cheers. With the rapid-fire-conflagration- fire- fire- conflagration elaboration in the measure of virtual data, people's capability to concentrate on colorful mores of music has also greatly extended. As a result, the want to deliver the voguish music to listeners has been a fascinating field of exploration in computer technology. One of the most important ministers in delivering a nice song to listeners is his or her persona particularity. In this charge, we thing to discover the effect of character tendencies at the cooperative filtering(stoner to consumer) that's one of the ultimate popular recommendation motors exercised directly. In order to get a person's personality, valuations of monumental 5 traits can be taken as input to the machine knowledge model which will prognosticate the person's personality." Addicts' personality traits can be studied in tenures of standard-issue- conclusion- conclusion monumental five personality traits outlined as plainspokenness to experience, meticulousness, affability, and Neuroticism.". The word persona comes from the " Latin word Persona ", which refers to a dramatic mask worn by a person.

II. LITERATURE REVIEW

Big Five, Myers- Briggs Type Indicator, and Keirsey Disposition genre models are compared. It demonstrates a strategy for forming a platoon with the most applicable conditions by using " Big five personality " members' characteristics and picking only those persons whose personalities are best suited to engineering work liabilities. The HEXACO model is used to explain a new system for prognosticating personality grounded on open- concluded questions. This composition examines the conception of " venue personality " via the lens of personality traits exploration in psychology. It uses a converse- grounded interview and open- concluded questions to prognosticate personality using the HEXACO model- ID Random Forest retrogression. Text from Twitter was used to estimate a stoner's personality, with Naive Bayes being the stylish compared to others. The Big Five personality traits were linked using a variety of machine literacy technologies. Keywords from reviews were matched to terms that represent personality characteristic confines, and personality traits may be constantly inferred from facial photos with an delicacy of further than 70%.

III. PROBLEM STATEMENT

The accurate and reliable prediction of an individual's personality based on the Big Five characteristics remains a significant challenge in psychological research and related fields. Despite considerable progress, there are several unresolved issues and limitations that hinder the advancement of personality prediction. One of the primary

concerns is achieving high accuracy and reliability in personality predictions. Existing methodologies and techniques may not fully capture the complexity and nuances of personality traits, leading to suboptimal predictions. Additionally, methodological variations across studies, ranging from self-report questionnaires to machine learning algorithms, create a lack of standardization and consensus on the most effective approach. This limits the comparability and generalizability of findings. Furthermore, achieving generalizability and accounting for contextual factors, such as cultural and socio-economic differences, pose challenges in personality prediction. The existing research primarily focuses on specific populations and may not adequately capture the diversity and variability of personality traits across broader populations. Another limitation is the reliance on cross-sectional data, which restricts understanding and prediction of personality development and change over time. Finally, the ethical considerations surrounding privacy, data protection, and potential misuse of personality predictions raise concerns that must be addressed for responsible and ethical use. Overcoming these challenges is crucial for advancing the accuracy, generalizability, and ethical considerations in personality prediction based on the Big Five characteristics, enabling practical applications in recruitment, mental health, and personalized recommendation systems, among others.

IV. METHODOLOGY

1. Data Collection:

Gather a diverse and representative dataset that includes information on individuals' personality traits assessed using validated Big Five instruments, along with other relevant demographic and contextual variables. Ensure data collection methods align with ethical guidelines, including informed consent and protection of participants' privacy.

2. Feature Selection and Engineering:

Identify a set of features that are relevant for personality prediction based on the Big Five characteristics. These features can include demographic information, self-reported traits, behavioral data, and linguistic patterns. Perform feature engineering techniques to transform and extract meaningful representations from the collected data. This may involve text preprocessing, dimensionality reduction, or normalization.

3. Methodological Approaches:

Psychological Assessments:

Calculate scores for each of the five traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism) based on participants' responses.

Machine Learning Techniques:

Utilize supervised learning algorithms, such as regression models (e.g., linear regression, logistic regression), support vector machines (SVM), or random forest, to predict personality traits based on the collected features.

Train the models using the labeled data with known personality trait scores, and then evaluate the model's performance using appropriate metrics (e.g., mean squared error, accuracy, precision, recall).

4. Addressing Limitations and Enhancements:

Account for contextual factors and potential biases by including additional variables (e.g., cultural background, socio-economic status) in the analysis.

Consider longitudinal studies or time-series analysis to investigate personality development and changes over time.

Incorporate multimodal data sources, such as biometric data or audio-visual cues, to improve the accuracy and richness of personality prediction.

5. Interpretability and Explainability:

Explore methods to enhance the interpretability of the personality prediction models, allowing researchers and users to understand the underlying factors influencing the predictions.

Employ techniques such as feature importance analysis, model visualization, or rule extraction to gain insights into the relationships between predictors and personality traits.

Attribute of dataset are property of dataset which are used for system and for personality many attributes are like heart gender of the person, age of the person ,Big five traits like Openness, Neuroticism, Extraversion, Agreeableness, Consciousness(value 1 -10).

	Daily events	Prioritising workload	Writing notes	Workaholism	Thinking ahead	Final judgement	Reliability	Keeping promises	Loss of interest	Friends versus money	Happiness in life	Energy levels	Small -big dogs	Personality
0	1	1	4	3	1	4	3	3	0	2	3	4	0	3
1	2	1	3	4	3	0	3	3	2	3	3	2	4	2
2	0	1	4	2	4	2	3	4	0	4	3	3	2	2
4	2	0	1	2	4	4	4	3	1	2	2	4	2	2
5	1	1	2	2	2	0	2	3	2	1	2	3	3	2
1005	2	1	0	3	1	2	2	2	3	3	3	2	2	2
1006	0	2	0	4	4	4	4	3	0	1	3	3	2	4
1007	2	0	0	0	3	0	2	4	0	3	2	0	2	1
1008	2	0	4	0	2	3	3	4	2	2	2	1	1	3
1009	2	4	3	4	3	2	4	4	2	3	3	1	2	3

864 rows * 57 columns

Data pre-processing is done by sklearn pre-processing method. we transformed string or categorical data into numerical values using the labelencoder method. We have removed nan values and replaced them with numerical or null values as default cases.

	0	1	2	3	4
Daily events	0.250416	0.058953	0.206877	0.026094	0.028915
Prioritising workload	-0.012803	-0.150045	0.555946	0.078913	0.128156
Writing notes	-0.006039	-0.015927	0.420849	0.225307	0.261380
Workaholism	0.069524	0.029275	0.527082	0.088573	0.032979
Thinking ahead	0.023475	0.127909	0.530457	0.035213	0.055426
Final judgement	0.046188	0.112493	0.119861	0.381338	-0.039756
Reliability	0.061028	-0.102481	0.539373	0.073534	-0.003491
Keeping promises	0.053358	-0.034661	0.420538	0.121450	-0.033511
Loss of interest	0.273777	0.226286	0.003524	-0.149262	0.101882
Friends versus money	0.021279	-0.111839	0.022026	0.381357	-0.045824

V. EXPERIMENTAL RESULTS

Collecting data from the dataset (responses.csv file). Through some of the responses made by people are collected and made a dataset containing a wide variety of data attributes.

	Daily events	Prioritising workload	Writing notes	Workaholism	Thinking ahead	Final judgement	Reliability	Keeping promises	Loss of interest	Friends versus money	Happiness in life	Energy levels	Small -big dogs	Personality	Fin value
0	1	1	4	3	1	4	3	3	0	2	3	4	0	3	
1	2	1	3	4	3	0	3	3	2	3	3	2	4	2	
2	0	1	4	2	4	2	3	4	0	4	3	3	2	2	
4	2	0	1	2	4	4	4	3	1	2	2	4	2	2	
5	1	1	2	2	2	0	2	3	2	1	2	3	3	2	
1005	2	1	0	3	1	2	2	2	3	3	3	2	2	2	
1006	0	2	0	4	4	4	4	3	0	1	3	3	2	4	
1007	2	0	0	0	3	0	2	4	0	3	2	0	2	1	
1008	2	0	4	0	2	3	3	3	4	2	2	1	1	3	
1009	2	4	3	4	3	2	4	4	2	3	3	1	2	3	

864 rows * 57 columns

Using Factor analyzer and varimax methods we have predicted the personalities of a top 5 persons.

Factor analyzer selects best factors from large dataset and using varimax we analyzed the values and predicted the personality of person.

	PERSON A	PERSON B	PERSON C	PERSON D	PERSON E
0	New environment	Mood swings	Writing notes	Friends versus money	Appearance and gestures
1	Energy levels	Self-criticism	Workaholism	Life struggles	Life struggles
2	Number of friends	Fake	Thinking ahead	Finding lost valuables	Mood swings
3	Socializing	Changing the past	Prioritising workload	Children	Health
4	Knowing the right people	Loneliness	Reliability	God	Getting angry

VI.CONCLUSION

In this paper, we bandy about how the personality is linked using different Big five traits. Then we study relationship between stoner and his/ her personality. Big five traits are the most accepted, exploration model which gives accurate results. The Big Five personality traits are set up in a variety of people of different periods, locales and societies. The personality is automatically classified by the system after stoner attempts the check by the data set handed in the aft end and our operation provides provisory data for the stoner to check their enhancement. Personality test not only useful for tone enhancement. Personality system is used in E- commerce spots, in Competitive examinations Psychometric tests, nuptial spots, Government sectors like army, cortege , Air force. Personality analysis and vaticination is more in recent times so further in future further personality traits can be added. Further any enhancement can be done using the data set and algorithms to ameliorate the delicacy and can be helpful for career guidance module, if stoner has good speaking and satisfying chops.

VII.FUTURE WORK

Incorporating more data: To improve the accuracy of personality prediction, more data from different sources can be incorporated, including social media posts, online activities, voice recordings, and biometric data. Applying deep learning techniques: Deep learning models, such as neural networks, can learn complex patterns and relationships in large datasets and may improve the accuracy of personality prediction. Considering cultural and individual differences: Personality traits can vary across cultures and individuals, so it's important to account for these differences when developing personality prediction models. Exploring new personality frameworks: There are different personality frameworks, such as the Big Five, Myers-Briggs, and HEXACO. Exploring new frameworks or combining existing ones can improve the accuracy of personality prediction. Integrating natural

language processing (NLP): Natural language processing techniques can be used to analyze text data, such as social media posts or emails, to identify linguistic patterns that are associated with certain personality traits.

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