Using Machine Learning to Predict Answers to Big-Five Personality Questions

Authors : Aadityaa Singla

Abstract : The big five personality traits are as follows: openness, conscientiousness, extraversion, agreeableness, and neuroticism. In order to get an insight into their personality, many flocks to these categories, which each have different meanings/characteristics. This information is important not only to individuals but also to career professionals and psychologists who can use this information for candidate assessment or job recruitment. The links between AI and psychology have been well studied in cognitive science, but it is still a rather novel development. It is possible for various AI classification models to accurately predict a personality question via ten input questions. This would contrast with the hundred questions that normal humans have to answer to gain a complete picture of their five personality traits. In order to approach this problem, various AI classification models were used on a dataset to predict what a user may answer. From there, the model's prediction was compared to its actual response. Normally, there are five answer choices (a 20% chance of correct guess), and the models exceed that value to different degrees, proving their significance. By utilizing an MLP classifier, decision tree, linear model, and K-nearest neighbors, they were able to obtain a test accuracy of 86.643, 54.625, 47.875, and 52.125, respectively. These approaches display that there is potential in the future for more nuanced predictions to be made regarding personality.

Keywords : machine learning, personally, big five personality traits, cognitive science
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