

Predict Human Personality based on Handwritten Signature

R.M.S. Tharuka* and C.R. Liyanage

Department of ICT, Faculty of Technology, University of Ruhuna

**Corresponding Author E-mail: Sandun_2016124@fot.ruh.ac.lk, TP: +94716020534*

Personality is a unique thing that everyone has and it shows how a person acts both in daily life and at work. Therefore, tracking a person's personality has become more important, especially for an employer. Within this context, the purpose of this research is to identify a person's personality through big five-factor personality traits based on his/her handwritten signature. The majority of earlier researchers have focused on analyzing handwritten signatures to describe personality with the help of graphology. The current research was designed a way to apply graphology on the signature image and improve the performance using neural networks. In this study, the personality of a person was evaluated based on four selected features of a signature -namely, the size, curved start, pen pressure, and underline. Further, an online questionnaire, which was conducted with the participation of 500 selected individuals, has been utilized to measure and gather the personality of each person. The complete system evaluates signature samples based on the above features and divided into four modules. Then these four modules were fed into the feature extraction model, which analyzed the input image with the Convolutional Neural Network (CNN) model and all four features were extracted from the signature data set. After that, the extracted features were combined with the online questionnaire test result to help with supervised learning. As the final output, this model predicts the correct big five-factor personality values with 85% accuracy, when a person wrote his/her signature on a paper. This solution is unique as this predicts the big-five factor personality traits based on the signature for the first time and this is a more efficient approach compared to other existing work

Keywords: Convolutional Neural Network; Personality Traits; Signature Analysis; Supervised Learning