Technical Explanation

The implementation of our Artificial Intelligence Personality Identification system is based on the study by David Delgado-Gomez, Federico Sukno, David Aguado, Carlos Santacruz and Antonio Artes-Rodriguez titled Individual Identification Using Personality Traits.

Personality Traits
- Neuroticism: impulsiveness, vulnerability, anxiety, depression and hostility
- Responsibility: degree of organisation, competency and self-discipline
- Agreeableness: degree of sociability, being talkative, cordiality and positive emotions
- Conscientiousness: degree of collaboration, tolerance, empathy and humility
- Openness: level of imagination, sensitivity to new surroundings and experiences

Machine Learning Model
- initially trained based on open-source personality datasets such as the Big Five Personality Test datasets or the MBTI datasets where each personality trait corresponds to a certain question and answer set
- continuously trained and updated using anonymous excerpts from user's answers for specific questions and is added as a potential datapoint for machine learning
- deploys usage of a Natural Language Processing such as GPT which can analyse word usage, intonation, language tone and grammar which are all indications of personality and personal habits
- questions generated to be prompted to user will be based on a set of existing personality test questions

Artificial Intelligence Personality Identification
- developed as an API to be used alongside existing authentication methods, providing an additional layer of security
- bandwidth and processing capacity of centralized NLP model for personality analysis and token generation is rented to applications that use the system
- personal data and registration key of users are stored locally within the respective applications deployment site

Registration
- Around 30 questions of varying complexity will be presented to the individual
- This usually takes around 5 - 10 minutes to complete in an adaptive test
- Adaptive tests are tests where questions prompted are always different
- Questions are relevant to the user's background obtained during personal data collection

- An encrypted key representing the individual's personality is generated, for use in future logins

Login

- Around 5 questions of varying complexity will be presented to the individual
- Like registration, these questions will be adaptive
- Users will be validated based on the encrypted key that is obtained from a database based on the login details provided
- After user attempt to login, a key will be generated
- A vector similarity of ≥95% between the login key and the encrypted key generated at the point of registration will be verified and authenticated

Continuous Secure Updates

- Individuals will be prompted with new adaptive questions every month to update their personality key in the database optionally, ensuring accuracy and information is the latest

Future Updates

- Incorporates the use of personal habits such as typing speed, speech intensity and pet phrases to further increase security of authentication
- Implementation would be similar to personality identification, which uses Machine Learning and NLP to track patterns in an individual's habits