

## Who's Who with Big-Five: Analyzing and Classifying Personality Traits with Smartphones

International Symposium on Wearable Computers 2011

In collaboration with Nokia Research, the papers showed that these “Big Five” (extraversion, agreeableness, conscientiousness, neuroticism, and openness) personality traits can be predicted based on smartphone metadata with an accuracy of up to 75.9%. This study used 8 months worth of data from 83 different individuals.

Data Input		Prediction Accuracy	
App usage	Number of times the following apps were used: Office, Internet, Maps, Mail, Video/Audio/Music, YouTube, Calendar, Camera, Chat, SMS, Games	Emotional Stability	71.5%
Call logs	Number of incoming/outgoing/missed calls, number of unique contacts called and unique contacts who called, average duration of incoming/outgoing calls	Extraversion	75.9%
SMS logs	Number of received/sent text messages, number of recipients/senders, Ø word length	Openness	69.3%
Bluetooth	Number of unique Bluetooth IDs, times most common Bluetooth ID is seen	Conscientiousness	74.5%
		Agreeableness	69.6%

Note: A similar study done by MIT, Harvard and ENS Lyon in 2013, show that by using *just* Call Data Records “which all carriers keep about their customers – the same records that governments are accessing for “data retention””(17), Big Five traits can be predicted with between 51% - 63% accuracy.