Abstract

The project is based around empathy based data analysis, and aims to investigate the correlation between users' emotional states and their mobile phone usage. This study's core objective is to identify the moments of boredom in a mobile phone user and build a model that can subsequently help find opportune moments for the delivery of notifications. The primary motive is to utilize moments of boredom to identify whether the user would interact with the notification based on his mobile phone usage.

A Machine Learning approach was taken to be able to utilize maximum features, and the machine learning algorithms were used to train a model that was then applied to a different dataset to predict boredom based on mobile phone usage patterns. For evaluation of the machine learning models, Confusion Matrix, AUC-ROC curve, recall, precision, accuracy and F1-Score were used.

It was possible to build a boredom classifier based on a user's mobile phone usage patterns from one dataset and use it to classify moments of boredom on users in a different dataset. Amongst the three Machine Learning Models used, Random Forest Classifier performed the best with an F1 score of 0.93 and Accuracy of 0.88. From the 5 features considered for building the ML models, Application Type gave the best predictions of boredom on the WeAreUs dataset with 11960 instances of boredom detected.