Public Abstract

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Department:Computer Science

Degree:MS

Title:Physiological Data Analysis - Alcohol Drinking Prediction Using Statistical and Deep Learning Methods

This study is about alcohol craving study based on real physiological data. The data was collected from the mobile ambulatory assessment system. The aim of this study is to predict whether people have alcohol drinking or not using machine learning methods. Then the psychology department can help their patients with alcohol craving problems.

The raw physiological data in this work include skin temperature, heart rate, galvanic skin response (GSR). The data was collected from 29 users with basic watch and the reading frequency is one record per minute. Based on large amount of research and having tried different methods, this work got 88.89% accuracy for within-user prediction and 75.68% for cross-user prediction, which are very good on real data. Since different users have different reaction to alcohol, this research found different models for different users and general model for all users. Moreover, experiments were conducted on single feature and this study discovered that heart rate is the most significant feature in alcohol drinking prediction. Since there are very few related work on alcohol drinking prediction, this study is a very good start in this field.