**Assignment 2**

**Joaquin Menendez**

**Paragraph #2**

**[Original]** ​Several studies have demonstrated the feasibility of stress detection from wearable biosensor data [11][12][13]. These previous stress detection systems have used physiological signals like heart rate variability, galvanic skin conductance, and respiration rate. One obvious limitation of previous work is that the biosensors used were designed for research purposes and are not practical. They are obstructive to daily activities, not easily wearable, and easily confounded by naturalistic environments. Bogomolov and colleagues[14] attempted to address the shortcomings of previous research by building a daily stress recognition system from mobile phone data, weather conditions, and individual traits. Using a multifactorial approach, they designed a person-independent statistical model with 72.28% accuracy. Bogomolov’s work is similar to our project in that they both use behavioral metrics (mobile phone data and fitness tracker data respectively) combined with data related to the transient environment and measurements regarding stable characteristics of individuals. Our work differs from Bogomolov and colleagues because we are not forgoing physiological measures all together and include heart rate measured unobtrusively. Our stress detection model also includes neurological data. Further, our measures of emotional state are self-reported measures of a person’s current feelings at the time of the survey, rather than a reflective subjective assessment of daily stress collected at the end of the day.

**[Edited]** ​Several studies have demonstrated the feasibility of stress detection from wearable biosensor data [11][12][13]. These previous stress detection systems have used physiological signals like heart rate variability, galvanic skin conductance, and respiration rate. One limitation of previous work is that the biosensors used were designed for research purposes and are not practical. These types of sensors are obstructive to daily activities, not easily wearable, and easily confounded by naturalistic environments.

Considering these constraints Bogomolov and colleagues[14] built a daily stress recognition system using mobile phone data, weather conditions, and individual traits. They develop a model, with a multifactorial approach, that reached a 72.28 % accuracy. Our work and Bolgomorov's are similar; both use behavioral metrics (mobile hone and fitness tracker data), stable characteristics of the individuals (personality surveys) and data related to the transient environment. Our work differs from Bogomolov and colleagues in the fact that we included heart rate measured unobtrusively and neuroimaging data. Further, Bolgomorov et al. used a reflective subjective assessment of daily stress collected at the end of the day; instead, we measure the emotional state of the subjects using a self-report of the person’s current feelings at the exact time of the survey.fitness tracker data), stable characteristics of the individuals (personality surveys) and data related to the transient environment. Our work differs from Bogomolov and colleagues in the fact that we included heart rate measured unobtrusively and neuroimaging data. Further, Bolgomorov et al. used a reflective subjective assessment of daily stress collected at the end of the day; instead, we measure the emotional state of the subjects using a self-report of the person’s current feelings at the exact time of the survey.

**Willingness to have the “before” and “after” presented to the class: 8**