Announcing the Final Examination of Apurva Lanman for the degree of Doctor of Philosophy

Time & Location: June 19, 2020 at 10:00 AM in Virtual https://ucf.zoom.us/j/9582723689?pwd=OWoyUFRQZGluQ
Title: A system and method to detect anxiety using Detect, Alert, and Distract Anxiety (DADA) model and algorithm

This dissertation delineates research in PTSD, and other anxieties in the military, firefighters, medical caregivers, and law enforcement domains. It is a comprehensive review of PTSD symptoms, training, treatments, and psychological, physiological, biological, neurological, diet, sleep, and environmental impact on people suffering from anxiety. It presents a new way to monitor and control PTSD without medicinal drugs, treatments, or training. It empowers people to control their anxiety and improve their quality of life.

It proposes a Detect, Alert, Distract Anxiety (DADA) model, which detects user’s anxiety, alerts the user of their symptoms, and provides distraction strategies to distract user’s negative thoughts and emotions. It allows them to control their symptoms and stop the progression of their anxiety. The engine of the DADA model is the Anxiety Detection (AD) algorithm, which facilitates continuous detection and monitoring of anxiety symptoms. The AD algorithm created using brainwaves and heart rate variability (HRV) detects anxiety in people with any type of disease.

It presents an engineering solution that facilitates real time continuous monitoring and control of the anxiety. It saves people from committing suicide. It is just like putting a bandage on a wound to heal it. There are three studies conducted in support of this dissertation. The first study validates the need for an engineering solution. This study proves that taking a healthy diet, having enough sleep, and having less consumption of harmful chemicals found in food and environment does not equate to an anxiety-free life. The second study collects the brainwaves and R-R interval data to generate an anxiety detection (AD) algorithm using people suffering from speech anxiety. The third study validates that the DADA model is effective and the AD algorithm detects anxiety as it occurs.

Major: Industrial Engineering

Educational Career:
Bachelor's of Aerospace Engineering, BS, 1999, Embry Riddle Aeronautical University
Master's of Software Engineering, MS, 2003, Embry Riddle Aeronautical University

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Approved for distribution by Gene Lee, Committee Chair, on June 2, 2020.

The public is welcome to attend.