

“Juxtopia® Context-Aware Mobile Mixed Reality Assistive Device (CAMMRAD): An Open Wearable Augmented Reality HMD for Research & Tech Transfer”

Tuesday, April 15, 2014 @ 3:30 – 4:45 PM

Computer Science Building, Room 210

Detailed Workshop: Tuesday April 15, 2014 @ 5:00 PM-6:30PM

Detailed Workshop for Virtual Reality Class (COSC 729, COSC 477, COSC 209) & Virtual Reality Laboratory Students

Jayfus T. Doswell, Ph.D., President/CEO, Juxtopia, LLC, Director of the IEEE Virtual Instructor Pilot Research Group (VIPRG), Bowie State University Department of Computer Science External Advisory Committee.

Abstract:

Mixed Reality is a term coined by Milgram that refers to the merging of real and virtual worlds to produce new environments and visualizations where physical and digital objects co-exist and interact, in real time. Mixed reality includes the following categories of reality: Augmented Reality (AR), augmented virtuality, virtual reality, the real-world. In 1990, Boeing researcher Tom Caudell first coined the term “augmented reality” to describe a digital display used by aircraft electricians that blend virtual graphics onto a physical reality with an objective to superimpose digital data over a real-world environment in real-time. This early innovation provided a “dream” to aircraft mechanics reducing the need to ask or try to translate what they found described in abstract diagrams located in manuals.

Dr. Doswell, built upon the pioneering research of Caudell and contributed over ten years of wearable AR research to the Juxtopia Group, an open source mixed reality head mounted display (HMD) platform. The **Juxtopia® Context-Aware Mobile Mixed Reality Assistive Device (CAMMRAD)** platform is continually advancing to improve human cognitive performance. In his talk, Dr. Doswell will survey past and current wearable AR-HMDs (such as Google Glass); Forecast the future of wearable AR systems; and Describe student and faculty research opportunities to further advance wearable AR systems to improve human cognition.

Detailed Workshop for Virtual Reality Lab Students: The detailed workshop will explain what is a microcontroller and how to program it a for wearable AR platform. How to program an app for wearable AR device such as Google Glass. The talk will also explain what are AR hardware subsystems and what are the strengths and weaknesses of several wearable AR hardware. Dr. Doswell will train undergraduate and graduate participants how to use the open source, Juxtopia® CAMMRAD, to develop commercial level AR hardware and software that may interface with various AR Goggle systems and facilitate technology transfer for BSU students and faculty. (All are welcome to attend)

Contact: Dr. Soo-Yeon Ji (sji@bowiestate.edu) or Dr. Sharad Sharma (ssharma@bowiestate.edu) if you have any question.