BME Seminar
Friday, October 6th, 2017
UTEB 150 at Storrs & Videoconferenced to UCHC CG-079B
12:00-1:00 pm

“Internet-of-Things Driven Wearable Systems for Telemedicine”

Presented By: Kunal Mankodiya, PhD, Assistant Professor, Electrical, Computer, and Biomedical Engineering
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Abstract: Today, our global society is facing some unique healthcare challenges due to rising costs, growing elderly population, and the prevalence of chronic diseases. The emerging field of Internet-of-Things (IOT) holds a great potential to fulfill unmet needs of healthcare. IOT could provide personalized telemedicine to anyone, anytime, and anywhere. However, IOT must overcome the hurdles of cross-domain medical procedures that are complex, demanding a high level of precision without compromising the quality. The challenges for IOT in telemedicine are manifold; firstly, the establishment of a remote unsupervised computing infrastructure fulfilling the medical needs and, secondly, the patient interactions with such high-tech infrastructure to accomplish diagnosis or treatment objectives.

In this talk, Dr. Mankodiya will present Wearable IOT, a unique framework that establishes human-centered interconnections among wearable sensors, fog computing gateways, and big data analytics—key elements for the future success of IOT in healthcare practices. He will demonstrate some of his ongoing (federally-funded) projects involving smartwatches and smart electronic textiles that are targeted to remotely intervene patients suffering from neuropsychiatric disorders such as Parkinson’s, post-traumatic stress disorders, and autism. He will also touch upon the emerging paradigm of edge/fog computing and its role in modern IOT concepts of smart cities and communities. Dr. Mankodiya will also discuss about his newly-developed courses and hack-a-thons for undergraduate and graduate students to nurture the skill of entrepreneurial and design thinking in the intersection of IOT and healthcare.

Biography: My Kunal Mankodiya is the Director of Wearable Biosensing Lab and is an assistant professor in the Dept. of Electrical, Computer, and Biomedical Engineering, University of Rhode Island, RI, USA since 2014. He pursued his postdoctoral research at Intel Science & Technology Center (ISTC) affiliated with Carnegie Mellon University (CMU), Pittsburgh, PA, USA. He received his Ph.D. degree from the University of Luebeck, Germany. He holds MS (University of Luebeck, Germany) and BE (Saurashtra University, India) degrees in Biomedical Engineering. He is a recipient of NSF (2016) CRII and NSF (2017) CAREER Awards. He was recognized as the Innovator-of-the-year by Future Textiles Awards, Frankfurt, Germany in 2017. Mankodiya was also selected among “40 under 40” by Providence Business News in 2017. His embedded computing design of a smart-textile ECG system earned him the 2010 SYSTEX Award, University of Ghent, Belgium. He has published a book on wearable health monitoring that serves as a hands-on guide to program high-end application processors for healthcare applications. He regularly organizes scientific workshops/symposiums on IOT for healthcare at various international conferences. He also organizes Hack-a-Thons every year to promote entrepreneurial thinking in the areas including IOT, healthcare, and aging. His course on Wearable IOT that is funded and supported by VentureWell blends design thinking with IOT concepts to nurture entrepreneurial skills in students from various backgrounds.