Announces the Ph.D. Dissertation Defense of

Sheikh Muhammad Asher Iqbal

for the degree of Doctor of Philosophy (Ph.D.)

“Development of a Wearable Device for Monitoring of Parameters Related to Heart Failure”

October 26, 2023, 9 a.m.-11 a.m.
EE 96, Room # 405
777 Glades Road
Boca Raton, FL

DEPARTMENT:
Department of Electrical Engineering and Computer Science

ADVISOR:
Waseem Asghar, Ph.D.

PH.D. SUPERVISORY COMMITTEE:
Waseem Asghar, Ph.D., Chair
Mary Ann Leavitt, Ph.D.
Imadeldin Mahgoub, Ph.D.
Bassem Alhalabi, Ph.D.
Mirjana Pavlovic, Ph.D.

ABSTRACT OF DISSERTATION
Development of a Wearable Device for Monitoring of Parameters Related to Heart Failure

Heart failure is a chronic cardiovascular disease that is caused due to the lack of blood supply from heart. This lack of blood supply leads to accumulation of the fluid in the thoracic region. Traditionally, implantable cardioverter defibrillators (ICDs) are used to treat HF and to monitor its parameters. Healthcare wearable devices (HWDs) are healthcare devices that can be worn or attached to the skin. HWD are non-invasive and low-cost means of providing healthcare at the point-of-care (POC). Herein, this dissertation discusses the development of a HWD for the monitoring of the parameters of heart failure (HF). These parameters include thoracic impedance, electrocardiogram (ECG), heart rate, oxygen saturation in blood and activity status of the subject. These are similar parameters as monitored using ICD. The dissertation will discuss the development, design, and results of the HWD.

BIOGRAPHICAL SKETCH
B.S., Lahore University of Management Sciences, Lahore, Punjab, Pakistan, 2018
M.S., Florida Atlantic University, Boca Raton, Fl, USA, 2022
Ph.D., Florida Atlantic University, Boca Raton, Florida, 2023

CONCERNING PERIOD OF PREPARATION
& QUALIFYING EXAMINATION
Time in Preparation: 2020 - 2023
Qualifying Examination Passed: Semester Spring 2020

Published Papers:

**Paper Under Review:**