Old Dominion University
College of Engineering and Technology
Department of Electrical and Computer Engineering

All lectures to be held at 3:00 p.m. on Fridays in Kaufman 224. For more information, contact
Dr. Dimitrie Popescu at (757) 683-3741 or e-mail dpopescu@odu.edu. Refreshments provided after the seminar.

Friday, April 1, 2016 Seminar Topic:

FAST EFFECTIVE ANALYSIS OF "DIGITAL" MAMMOGRAM IMAGES FOR BREAST CANCER TREATMENT
by
Dr. Abu Asaduzzaman, Ph.D.
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Director of Computer Architecture and Parallel Programming Laboratory
Department of Electrical Engineering and Computer Science
Wichita State University, Kansas

Abstract:

Breast cancer is the most common cancer among American women; about one in eight (i.e., 12.5%) women in the U.S. will develop invasive breast cancer during their lifetime; and terrifyingly, breast cancer is the second leading cause of cancer death in women. The growing demand for time- and cost efficient solutions to treat cancer is fueling the interest in developing image processing based pattern recognition techniques. The success of fast detection and proper treatment of cancer depends on speedy/accurate analysis of a large number of images. In this study, we introduce a novel technique to analyze 'digital' mammogram images applying HPC techniques. The proposed technique has potential to accurately encircle the suspicious regions in mammograms, because the suspicious regions are converted into equivalent digital values to analyze. Dr. Asaduzzaman, an expert in HPC systems, has been collaborating with Dr. Mohammed F. Islam, an Oncology Specialist at the University of Pittsburgh Medical Center Clinic, and Dr. Kim Cluff, an Assistant Professor of Biomedical Engineering at Wichita State University, to develop a fast effective solution for breast cancer treatment.

Bio:

Abu Asaduzzaman received the Ph.D. and M.S. degrees, both in computer engineering, from Florida Atlantic University (FAU), USA and the B.S. degree in electrical engineering from Bangladesh University of Engineering and Technology (BUET), Bangladesh. Dr. Asaduzzaman joined the Department of Electrical Engineering and Computer Science (EECS) at Wichita State University in 2010, and is currently an assistant professor in the same department. His current research interests include both theoretical and experimental understanding of computer systems, high performance computing (HPC), and HPC in healthcare technology. Dr. Asaduzzaman's Computer Architecture and Parallel Program Laboratory (CAPPLab) has been named a GPU (graphics processing unit) Research Center by NVIDIA. He has authored 20 refereed journal articles, 75 peer-reviewed conference proceedings, and two book chapters out of his research work. He has received eight research grants and 25 honors/awards. He has served as a reviewer of NSF programs and as a TPC/IPC member of IEEE conferences. Mr. Asaduzzaman is a member of the IEEE, ASEE, and the honor society of Phi Kappa Phi, Upsilon Pi Epsilon, Golden Key, Who's Who Among American Colleges & Universities (1997), and Who's Who in Science and Engineering (2012). As an invited speaker, Dr. Asaduzzaman has presented his research work in Bangladesh, Canada, Japan, Sri Lanka, Thailand, Turkey, and USA.