Abdullah-Al-Zubaer Imran

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Research Interests

Medical Image Analysis | Machine Learning | Computer Vision | Visualization | Statistical Interpretation

Education

2017–present	**PhD in Computer Science** University of California, Los Angeles (UCLA), Los Angeles, California Adviser: Distinguished Professor Demetri Terzopoulos Major courses: Large scale data mining, Computer vision in medical imaging, Top computational algorithms, Computational methods in Biostatistics
2014–2016	**MS in Computer Science** Delaware State University (DSU), Dover, Delaware Thesis: Estimation of breast anatomical descriptors in mastectomy CT images Advisers: Professor David Pokrajac, Professor Predrag Bakic (UPenn) Major courses: Machine Learning, Pattern Recognition, Computational Intelligence & Informatics, Image Processing, Theory of Computing
2008–2012	**BSc in Computer Science & Engineering** Rajshahi University of Engineering & Technology (RUET), Rajshahi Thesis: Automatic extraction of road network from high resolution satellite images President gold medalist as the top candidate in the graduating class (1/57)

Research Experiences

2017–present	**Graduate Student Researcher**, UCLA Graphics & Vision Lab, Los Angeles, California Learning-based medical image analysis
2014–2016	**Graduate Research Assistant**, DSU Medical Imaging & Simulation Lab, Dover, Delaware Substantially contributed to a project on breast cancer research, supported by the Delaware INBRE program, with a grant from the National Institute of General Medical Sciences-NIGMS (P20 GM103446) from the National Institutes of Health and the State of Delaware.

Teaching Experiences

2017–present	**Lecturer of Electrical & Computer Engineering**, North South University, Dhaka, Bangladesh (On leave since September 2017)
2013–2014	**Lecturer of Computer Science & Engineering**, Ahsanullah University of Science & Technology, Dhaka, Bangladesh
2012–2013	**Lecturer of Computer Science & Engineering**, Northern University Bangladesh, Dhaka, Bangladesh

Publications

Abdullah-Al-Zubaer Imran, Predrag Bakic, and David Pokrajac. *Characterization of adipose compartments in mastectomy CT images.* SPIE Medical Imaging: Physics of Medical Imaging, 2018.

Abdullah-Al-Zubaer Imran, Predrag Bakic, Susan Weinstein, Andrew Maidment, and David Pokrajac. *Simulated breast anatomy optimization for improved realism based upon the analysis of mastectomy CT images.* Manuscript in preparation.

Abdullah-Al-Zubaer Imran, Predrag Bakic, Andrew Maidment, and David Pokrajac. *Optimization of the simulation parameters for improving realism in anthropomorphic breast phantoms.* SPIE Medical Imaging: Physics of Medical Imaging, 2017.

Adam Kuperavage, Abdullah-Al-Zubaer Imran, Predrag Bakic, Andrew Maidment, and David Pokrajac. *Validation of Cooper's ligaments thickness in software phantoms.* SPIE Medical Imaging: Physics of Medical Imaging, 2017.

Lesley Cockmartin, Hilde Bosmans, Kristina Bliznakova, David Pokrajac, Abdullah-Al-Zubaer Imran, Nicholas Marshall, Andrew Maidment, Predrag Bakic. *Creation of realistic structured backgrounds using adipose compartment models in a test object for breast imaging performance analysis.* Radiological Society of North Americal, Scientific Assembly and Annual Meeting, 2016.

Abdullah-Al-Zubaer Imran, David Pokrajac, Andrew Maidment, Predrag Bakic. *Estimation of adipose compartment volumes in CT images of a mastectomy specimen.* SPIE Medical Imaging: Physics of Medical Imaging, 2016. (Poster)

Abdullah-Al-Zubaer Imran, Predrag Bakic, David Pokrajac. *Spatial distribution of adipose compartment size, shape and orientation in CT breast images of a mastectomy specimen.* IEEE Signal Processing in Medicine and Biology (SPMB) Symposium, 2015. (Poster)

David Pokrajac, Abdullah-Al-Zubaer Imran, Predrag Bakic. *Monte Carlo testing and verifications of numerical algorithm implementations.* IEEE Conference on Advanced Technologies, Systems, and Services in Telecommunications-TELSIKS, 2015. (Oral)

Posters

Validation of simulated Coopers' ligaments in anthropomorphic breast phantoms using three-dimensional watershed method. Adam Kuperavage, Abdullah-Al-Zubaer Imran, Predrag Bakic, and David Pokrajac. DE IDeA Conference at the University of Delaware, Newark DE, Feb 25, 2016.

Qualitative improvement of CT breast image for screening and analysis of the segmented compartments for classification. Abdullah-Al-Zubaer Imran and David Pokrajac. 5^{th} Graduate School Research Symposium at DSU, Dover DE, Apr 17, 2015.

Classification of magnetic resonance brain images using feature extraction and adaptive neuro-fuzzy inference. Abdullah-Al-Zubaer Imran, Tomasz Smolinski, and David Pokrajac. 6^{th} Annual Neuroscience Research Symposium organized by The Delaware Center for Neuroscience Research at Delaware Biotechnology Institute, Newark DE, Dec 05, 2014.

Talks

Finite Automaton: DFA and NFA, Open lecture at California State Polytechnic University, Nov 29, 2016.

Estimation of breast anatomical descriptors from mastectomy CT images, Thesis defense at DSU, Jun 30, 2016.

Towards development of realistic breast phantoms, Thesis proposal defense at DSU, Mar 11, 2016.

Enhancement of phantoms' realism in breast imaging simulation, Graduate seminar presentation at DSU, May 05, 2015.

Computational complexity: NP completeness, Department of Computer and Information Sciences at DSU, May 02, 2015.

Diagnosis of brain tumor using MRI scan incorporated with feature extraction and adaptive neuro-fuzzy inference system, 42^{nd} Annual Honors Day Program at DSU, Apr 16, 2015.

Technical Skills

Programming	Python, Matlab, C/C++, R, Julia
Library/ Framework	Caffe, TensorFlow, OpenCV, OpenGL, ITK/VTK
Others	3D Slicer, MIPAV, ITK-SNAP, ImageJ, ParaView, Weka, Centricity

Achivements, Awards, Leaderships, & Affiliations

Graduate Division Fellowship at UCLA 2017-2018

Reviewer of ICAEE 2017 conference

NIH Research Fellowship at DSU, 2014-2016

University Gold Medalist as the top candidate at RUET, 2012

Participated as team leader at the ACM ICPC Dhaka site competition, 2010

Student of the year award for academic excellence at RUET, 2009 & 2011

Student member of IEEE Coastal Los Angeles Section and IEEE Computer Society