

MD FIAZ ISLAM BHUIYAN

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EDUCATION

The University of Texas at Dallas

August 2017 - May 2021

B.S. Computer Engineering

GPA: 3.99/4.0

- Collegium V Interdisciplinary Honors Program

- Phi Kappa Phi (Top 7.5% of Class of 2021)

TECHNICAL SKILLS

Programming & Software

C, C++, Java, Python, MATLAB, MIPS, Linux, Photoshop, Latex

Machine Learning

Tensorflow, Keras, OpenCV

Hardware & Simulation Tools

CCS (Embedded Systems), PSPice, Verilog, LabView

WORK & RESEARCH EXPERIENCE

Quantitative BioImaging Lab at UT Dallas

March 2019 - Present

Undergraduate Researcher

- Synthesize multimodal imagery to create coherent pictures guiding clinical interventions
- Use Deep Learning and Convolutional Neural Networks to process medical images

Locomotor Control Systems Laboratory at UT Dallas

March 2018 - March 2019

Embedded Systems Engineering Intern

- Develop efficient software for the real-time processing of the embedded systems used in prosthesis like bionic legs and exoskeletons
- Test and debug existing code to integrate new functionalities like wireless control protocols

Biomedical Physics Department, The University of Dhaka

June 2018 - August 2018

Visiting Research Intern

- Develop the hardware and software setup for a telemedicine web-server

PROJECTS

CometBot - Autonomous Robot

January 2019 - April 2019

- Built a completely autonomous robot for the IEEE Region 5 Robotics Competition
- Developed the navigation system for the robot using ultrasound sensors and computer vision

Train-O - HackHarvard

10/2019 10/2019

- Use OpenCV motion tracking framework to identify and interact with users
- Create our own classification and build a robot out of tiny miss-match parts

Image-guided Intravascular Robotic System for Cardiac Surgeries

March 2019 - Present

- Developing a versatile GUI that will allow the physicians to analyze the information obtained from multiple imaging modalities and sources.
- Using Deep Learning for image segmentation and processing
- Designing and conducting experiments to validate the image registration

ComEx-2: 2nd Generation Exoskeleton for Knee Support

May 2018 - March 2019

- Developed a GUI based control module that will make the exoskeleton more accessible to the elderly and patients with partial paralysis
- The GUI was built for a 16x2 LCD screen and ran on a microcontroller

IoT Based Telemedicine Web Server

June 2018 - August 2018

- Built a web server to display real-time diagnostic data, received from the various sensors, on a web-page
- Interfaced with cloud server to enable remote access

ACADEMIC ACHIEVEMENTS

School of Engineering Deans List (Top 10%)	4 of 5 Semesters
IEEE Region-5 Robotics Competition (Finalist)	2019
Academic Excellence Scholarship (full tuition scholarship & stipend)	2017-2021
High School Valedictorian	2016
3rd Position Holder in National Science Fair	2015
World Highest Score in IGCSE O-Level Biology	2014

PUBLICATIONS & MANUSCRIPTS

Image Guided Mitral Valve Replacement: Registration of 3D Ultrasound and 2D X-ray Images. James Dormer, **MD Fiaz Islam Bhuiyan**, Baowei Fei. *To appear in SPIE Image-Guided Procedures, Robotics Interventions and Modeling 2020, Houston.* (This project was funded through NIH grant)

Deflection Measurement of A Mitral Valve Implant Deployment Catheter using FBG sensor and Tendon Information. Nahian Rahman, Nancy Deaton, James Dormer, Drew Elliot, Jun Sheng, **MD Fiaz Islam Bhuiyan**, Baowei Fei, Muralidhar Padala, Jaydev Desai *To appear in IEEE ICRA 2020, Paris.*

POSTERS & PRESENTATIONS

Biopsy Needle Tracking using Force Sensor and Deep Learning	2019
Coherent UWB Radar-on-Chip for In-Body Measurement of Cardiovascular Dynamics	2019

EXTRA-CURRICULAR

IEEE UTD Student Chapter President

January 2019 - Present

Lead the largest Engineering Organization at UTD(1000+ Members). Manage a 18 person team to organize technical workshops and competitions, professional development training, tutoring, industry talks. Coordinate with the IEEE Regional and National chapters to participate in Regional and National Competitions. 10-12 hours/week

Student Representative - IEEE Region 5

November 2019 - Present

Give voice to the needs of over 90 Student Branches in Region-5. Organize events and competitions to engage the student branches in Region-5.

RELEVANT COURSES

Linear Algebra, Probability & Statistics, Differential Equations, Advanced Engineering Math, Discrete Math, Data Structures & Algorithms, Software Engineering, Digital Systems, Digital Circuits, Electrical Network Analysis, Signals & Systems, Electronic Devices, Electronic Circuits, Computer Architecture, and Neural Networks and Deep Learning (Coursera)