Md.Tahsin Mostafiz

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𝔾 Google Scholar • R^G Researchgate

Research Interests

Machine Learning, Deep Learning, Computer Vision, Natural Language Processing

Education

Master of Science, *Electrical and Electronic Engineering* *June 2019-*
Bangladesh University of Engineering and Technology (BUET)

Bachelor of Science, *Electrical and Electronic Engineering* *Feb 2017*
Bangladesh University of Engineering and Technology (BUET)

Honors and Awards

253rd position among 3314 teams (Top 8%), SIIM-ISIC Melanoma Classification 2020, Kaggle.com   2020

37th position among 2943 teams (Top 2%), APTOS 2019 Blindness Detection, Kaggle.com   2019

355th position among 3229 teams (Top 11%), TGS Salt Identification Challenge, Kaggle.com   2018

Second Runner-up, Inter-University Project Show 2015, IEEE BUET Student Branch   2015

5th position, Web Design Contest 2015, BUET   2015

Divisional Champion, 1st Runner-up, 2nd Runner-up, Bangladesh Mathematical Olympiad   2006-2008

Work Experience

Machine Learning Engineer, AI Samurai Japan Limited, Dhaka   Dec 2019-

Research Assistant, mHealth Laboratory, BME Department, BUET   Oct. 2019- December 2019

Professional Member, Humanitarian Activity Committee, IEEE Bangladesh Section   June 2019-

Machine Learning Researcher, Semion Limited, Dhaka, Bangladesh   March 2017- May 2019

Intern, Semion Limited, Dhaka, Bangladesh   August 2016- March 2017

Writer and Editor, Zero2Infinty, A Monthly Science Magazine   June 2013- August 2015

Research Articles

o "Pathology Extraction from Chest X-Ray Radiological Reports: A Performance Comparison" **Tahsin Mostafiz**, Dr. Khalid Ashraf *arXiv 1812.02305*

o "Retinal Blood Vessel Segmentation using Residual Block Incorporated U-Net Architecture and Fuzzy Inference System" **Tahsin Mostafiz**, Ismat Jarin, Dr. Shaikh A. Fattah and Dr. Celia Shahnaz; *IEEE WIECON-ECE 2018*.

o "Photoplay: An Android Application to Stimulate Children's Cognitive Development" Avijit Mitra, **Tahsin Mostafiz**, Raihan Ur Rashid; Humanitarian Technology Conference (R10-HTC), 2017 IEEE Region 10, Dhaka.

Ongoing Research Works

o **Intracranial Hemorrhage Detection and Localization from CT Images**
Developing an algorithm for the accurate detection and localization of intracranial hemorrhage in brain from CT images.

o **Pancreas Segmentation in CT images**
Implementing a CNN architecture for the segmentation of Pancreas from CT images.

Ongoing Project Works

o **Deep Learning Course Design for Masters Program**
Designing a deep learning course for the Masters program of the *Biomedical Engineering Department, BUET*

Technical Skills

Programming Languages: C, C++, MATLAB, JAVA, Assembly, LaTeX, Python

Python Frameworks: OpenCV, BeautifulSoup, Pandas, Numpy

Machine Learning Frameworks: Scikit-Learn, Tensorflow, Keras, PyTorch, Fast.ai

Hardware Design Tool: MATLAB, Proteus, Quartus, PSpice

Integrated Development Environment : PyCharm, Android Studio, IntelliJ IDEA, Visual Studio, Arduino

Hardware: Arduino, Raspberry Pi, AVR Microcontrollers

Professional Projects

- Backend deep learning algorithm development of **RadAssist**, a web application for the detection and localization of *Intracranial Hemorrhage* from brain CT images.
- **SemRad**, a Teleradiology Solution: Development of An Inference Tool and a Class Activation Mapping (CAM) Tool Using *ResNet101* for Detection and Localization of Abnormalities in Chest X-ray Images for this software.
- **semDDX**, *an Android app*: This Android app was designed to help the users navigate the vast landscape of differential diagnoses and help medical students to learn DD easily.
- **Risk Factors Detection**: Identification of Risk Factors for Heart Disease from *i2b2* dataset Using a Bidirectional LSTM network with 50 Dimensional Glove Word Embedding.
- **Differential Diagnoses**, *an Amazon Alexa skill*: This Alexa skill was designed to help the users find all differential diagnoses for a symptom.
- **Symptom Checker**, *an Amazon Alexa skill*: This skill was designed to help the users detect disease from symptoms.

Other Projects

- Implementation of A Deep Domain Adaptation Method for *2018 Visual Domain Adaptation (VisDA) Challenge*.
- Design of An Oscilloscope for the Measurement of Current and Voltage
- Interface and Gaming Console Design for A Computer and An Android Game.
- Home Security Notification and Control System via Text Messaging.
- Gate Level Design and Simulation of an 8-bit Microprocessor.
- Gate Level Design, Cell Layout, and Simulation of a 10-bit Priority Encoder.

Relevant Courses

Undergraduate: Linear Algebra, Probability and Statistics, Ordinary and Partial Differential Equations, Digital Signal Processing

Self-taught: Machine Learning(*Coursera*), Deep Learning Specialization(*Coursera*), Reinforcement Learning(*Udacity*)

References

Dr. Mohammad Ariful Haque
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Dr. Md. Forkan Uddin
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