



# Tusher Chandra Mondol

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## RESEARCH INTEREST

Artificial Intelligence, Machine Learning, and Data Science.

## EDUCATION

**Khulna University of Engineering & Technology**

*B.Sc in Computer Science and Engineering*

CGPA: 3.25/4.00

CGPA of last 3 semesters: 3.54

**Khulna, Bangladesh**

*March, 2015-March, 2019*

## KEY SKILLS

<b>Programming Language</b>	Python, C, C++
<b>Web Based Language</b>	HTML, CSS, PHP
<b>DBMS</b>	Oracle, MySQL
<b>IDE</b>	Anaconda, CodeBlocks
<b>Software Packages</b>	CISCO Packet Tracer
<b>Operating System</b>	Windows, Ubuntu

## PUBLICATIONS

§ **Tusher Chandra Mondol**, Hasib Iqbal, M M A Hashem.

*"Deep CNN-Based Ensemble CADx Model for Musculoskeletal Abnormality Detection from Radiographs"*  
 primarily accepted in 5th International Conference on Advances in Electrical Engineering (ICAEE 2019).

## RESEARCH EXPERIENCE

**"Deep CNN-Based Ensemble CADx Model for Musculoskeletal Abnormality Detection from Radiographs"**

- § The main goal of this research is to develop a computer-aided diagnosis (CADx) model that will help the doctors to identify musculoskeletal abnormalities through radiographs. Our proposed technique tested on a benchmark radiographic dataset named 'MURA'.
- § This research finds out the various suitable benchmark architectures (VGG-19, ResNet, DenseNet) efficiency to detect musculoskeletal abnormalities in radiograph and leads to propose a hybrid supervised machine learning approach.
- § This Hybrid approach generates 85.85% accuracy which is relatively better than other classifiers in terms of performance metrics.

**"Non-Invasive Measurement of Blood Components Level from PPG Characteristics Features of Fingertip Video Using Deep Neural Networks"**

- § The main goal of this research is to propose a new non-invasive, and convenient method with the motive of measuring blood components level (Hemoglobin, Glucose, Hemoglobin--A1C, and Creatinine) using Photoplethysmogram (PPG) characteristics features which are extracted from fingertip videos.
- § Genetic Algorithm (GA) was used to select best features and finally a Deep Neural Networks (DNNs) model was developed to measure blood components level.
- § This approach estimates the accuracy of  $\pm 0.243$  gm/dL ( $R = 0.940$ ),  $\pm 0.237$  mmol/L ( $R = 0.975$ ),  $\pm 0.112$  (%) ( $R = 0.949$ ), and  $\pm 0.031$  mg/dL ( $R = 0.939$ ) respectively for Hemoglobin, Glucose,

Hemoglobin A1C, and Creatinine.

## SELECTED ACADEMIC PROJECTS

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### Secured Automated Toll Collection System

*Nov 2017-April 2018*

- § It is a Raspberry Pi based system concerned with fully automated toll collection system using RFID tags with privacy preserving mutual authentication system.
- § It has a websites that works as a bridge between authority and citizens.

### Library Management System

*April 2017 – October 2017*

- § This websites helps to manage daily activities of a library.
- § It helps to check available books, take books as loan, check fine, check abilities of a student to take loan, total amount of loans in a day.

### Alumni Association Management System

*Nov 2016 – April 2017*

- § A web platform to manage alumni association of a university.
- § It works as a bridge between authority and citizens.

## AWARDS AND ACHIEVEMENTS

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- § Champion in University Day Project Showcasing, 2017, organized by KUET.
- § Champion in Intra Department Idea Contest, 2017, organized by CSE association, KUET.
- § 2<sup>nd</sup> in System Development Project, 2017, organized by Department CSE, KUET.
- § 5<sup>th</sup> in Intra KUET Programming Contest, 2016, organized by Department CSE, KUET.
- § Scholarship from Chevron International REACH Scholarship Program.
- § Vocational Scholarship from Khulna University of Engineering and Technology (2015-2018).

## ONLINE COURSES

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- § Machine Learning by Stanford University (Hosted by Coursera).

## LEADERSHIP & VOLUNTARY ACTIVITIES

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- § Vice President, CSE association, KUET.
- § Vice President, Special Group Interested in Programming Contest(SGIPC), KUET.
- § General Secretary, Hardware Acceleration Club of KUET(HACK), KUET.
- § General Secretary, Dream(blood donating organization), KUET.
- § Chief Organizer, Youth Summit (2017,2018), KUET.
- § Organizer, National High School Programming Contest, Khulna Zone (2015,2016,2017).

## REFERENCES

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### § Dr. M.M.A Hashem

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### § Dr. K.M Azharul Hasan

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