

# Tonmoy Hossain

Ahsanullah University of Science and Technology

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## Summary

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Lecturer at the Department of Computer Science and Engineering, Ahsanullah University of Science and Technology (AUST). Right after completing the graduation, I have the opportunity to serve my alma mater. My primary research interest lies at Deep Learning, Computer Vision, Data Mining and Medical Image Processing.

## Education

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**Ahsanullah University of Science and Technology**

*B. Sc. in Computer Science and Engineering*

**GPA: 3.842** on a scale of 4.00 (3<sup>rd</sup> position out of 152 students)

**Dhaka, Bangladesh**

*May 2015 - July 2019*

**Dhaka College**

*Higher Secondary Certificate (H.S.C)*

GPA: 5.00 on a scale of 5.00

**Dhaka, Bangladesh**

*July 2012 - August 2014*

**Ideal School and College**

*Secondary School Certificate (S.S.C)*

GPA: 5.00 on a scale of 5.00

**Dhaka, Bangladesh**

*June 2012*

## Research Interests

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Computer Vision, Data Mining, Image Processing, Machine Learning, Deep Learning & its sub-fields

## Undergraduate Thesis

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**Brain Tumor Detection using Convolutional Neural Network**

*Supervisor: Faisal Muhammad Shah, Associate Professor, Dept. of CSE, AUST.*

We worked on different types of MRI images in this research work. The main objective is to detect the abnormal tissues on the MRI and segment the abnormal cells known as brain tumor from the MRI. We've developed a hybrid model using the existing ones to detect the abnormalities. A five layer CNN model is employed to distinguish the abnormal cells.

## Publications

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- F. S. Shishir, T. Hossain and F. Muhammad Shah, "EsharaGAN: An Approach to Generate Disentangle Representation of Sign Language using InfoGAN," *Accepted and Presented in 2020 IEEE Region 10 Symposium (TENSYPMP)*, 5-7 June 2020, Dhaka, Bangladesh.
- T. Hossain, F. S. Shishir and F. Muhammad Shah, "A Novel Approach to Classify Bangla Sign Digits using Capsule Network," *2019 22nd International Conference on Computer and Information*

*Technology (ICCIT), Dhaka, Bangladesh, 2019, pp. 1-6, doi: 10.1109/ICCIT48885.2019.9038609.*

- **T. Hossain**, F. S. Shishir, M. Ashraf, M. A. Al Nasim and F. Muhammad Shah, "**Brain Tumor Detection Using Convolutional Neural Network**," *2019 1st International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT), Dhaka, Bangladesh, 2019, pp. 1-6, doi: 10.1109/ICASERT.2019.8934561.*
- Maitra, Shithi & **Hossain, Tonmoy** & Al-Sakin, Abdullah & Inzamamuzzaman, Sheikh & Mamun, Md & Shabnam, Syeda. (2019). "**A Gender-Neutral Approach to Detect Early Alzheimer's Disease Applying a Three-layer NN**". *International Journal of Advanced Computer Science and Applications*. 10. 10.14569/IJACSA.2019.0100368.
- Faisal Muhammad Shah, **Tonmoy Hossain**, Mohsena Ashraf, Fairuz Shadmani Shishir, MD Abdullah Al Nasim, Md. Hasanul Kabir. "**Brain Tumor Segmentation Techniques on Medical Images - A Review**", *International Journal of Scientific & Engineering Research, Volume 10, Issue 2, February-2019. ISSN 2229-5518*
- S. Maitra, **T. Hosain**, A. Al-Sakin and F. M. Shah, "**Artificial Prognosis of Cardiac Disease using an NN: A Data-scientific Approach in Outlier Handling**," *2019 4th International Conference on Electrical Information and Communication Technology (EICT), Khulna, Bangladesh, 2019, pp. 1-12, doi: 10.1109/EICT48899.2019.9068847.*

## Technical Skills

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**Languages:** Python, C, C++, C#, JAVA, HTML5, PHP, XML, JavaScript, R, .net, 80x86 Assembly

**Framework:** CSS, OpenGL, WebGL

**Database:** MySQL, SQLite, Oracle

**Design Tools:** Eclipse, NetBeans, Microsoft Visual Studio, PyCharm

**Operating System:** Windows, Android, LINUX

**Hardware:** ATMEL (AVR Programming)

**Deep Learning Tools:** Keras, PyTorch, Tensorflow

**Others:** PL/SQL, UML, LaTeX

## Academic Projects

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1. Supershop Management System
2. Optimal Location Detection for a Food Restaurant
3. Extraction of text from Images
4. Segmentation of Brain Tumor using Image Processing Techniques
5. Melitus Detector
6. Diabetes Prediction

## Teaching Experience

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**Lecturer**

*Department of Computer Science and Engineering*

*Ahsanullah University of Science and Technology*

**January 2020 - Present**

**Adjunct Lecturer**

**August 2019 - January 2020**

## Courses Taken

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- Introduction to Computer Systems (CSE1108)
- Computer Programming Sessional (CSE1288)
- Digital Logic Design Lab (CSE2106)
- Introduction to Computer Science (CSE2146)
- Database Lab (CSE3104)
- Software Development-V (CSE3200)
- Artificial Intelligence Lab (CSE4108)

## Awards & Achievements

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- "Dean's List of Honor" (based on B.Sc. result)
- 7<sup>th</sup> **Place** out of 200 participants from 25 Universities in the EWU Inter University Math Olympiad 2019
- Certificate on Presentation at 22<sup>nd</sup> International Conference on Computer and Information Technology (ICCIT - 2019)
- Certificate on Presentation at 1<sup>st</sup> International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT - 2019)

## Conference & Workshop

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- Presented a paper on 2020 IEEE Region 10 Symposium (TENSYP 2020), Dhaka, Bangladesh
- Presented a paper on 4<sup>th</sup> International Conference on Electrical Information and Communication Technology (EICT - 2019), Khulna, Bangladesh
- Presented a paper on 22<sup>nd</sup> International Conference on Computer and Information Technology (ICCIT - 2019)
- Presented a paper on 1<sup>st</sup> International Conference on Advances in Science, Engineering and Robotics Technology (ICASERT, 2019)
- Participated in "How Computer Program Works", organized by Innovation for Poverty Action associated with University of California, San Diego and Cornell University.
- Participated in "LEARN TO WRITE RESEARCH PAPER USING LATEX", organized by IEEE AUST Student Branch & IEEE AUST SB WIE Affinity Group

## Reference

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**Prof. Dr. Kazi A Kalpoma**

Head, Department of CSE

Director, ICT Center

Ahsanullah University of Science and Technology

Email: kalpoma@aust.edu

**Dr. S. M. A. Al-Mamun**

Professor, Department of Computing Science and Engineering

Ahsanullah University of Science and Technology

Email: almamun@aust.edu, al\_mamun81@yahoo.com

**Mr. Faisal Muhammad Shah**

Associate Professor, Department of Computer Science and Engineering

Ahsanullah University of Science and Technology

Email: faisal505@hotmail.com

I declare that the all the statements made in this curriculam vitae are correct.

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