

RESUME – K. M. NAIMUL HASSAN

PERSONAL INFORMATION K. M. Naimul Hassan
Dhaka, Bangladesh
 [Personal website](#)
 [LinkedIn profile](#)
 [GitHub profile](#)
 [Email](#)

RESEARCH INTERESTS

- Applied Machine Learning/Deep Learning
- Healthcare
- Signal Processing
- Ubiquitous Computing
- Conversational AI

EDUCATION **M.Sc. in Electrical & Electronic Engineering (EEE)** *July 2021-Present*

- Expected to be completed before June 2023
- Major in Communication & Signal Processing
- Noteworthy courses : Deep Learning, Machine Learning and Pattern Recognition, Biomedical Signal Processing, Advanced Multimedia Communication, Brain-Computer Interface
- Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

B.Sc. in Electrical & Electronic Engineering (EEE) *February 2016-February 2021*

- Major in Communication & Signal Processing
- Noteworthy courses : Digital Signal Processing, Random Signal Processing, Communication Systems, Digital Image Processing, Biomedical Signals, Instrumentation and Measurement, Linear Algebra
- Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh

EXPERIENCE **Graduate Fellow** Department of Electrical & Electronic Engineering (EEE), Bangladesh University of Engineering and Technology (BUET) *December 2021-Present*

Research Assistant (RA) Department of Electrical & Electronic Engineering (EEE), Bangladesh University of Engineering and Technology (BUET) *July 2021-November 2021*

PUBLICATIONS **International Conference Proceedings**

- **Hassan, K. M. N.** and Haque, M.A., "SS+CEDNet : A Speech Privacy Aware Cough Detection Pipeline by Separating Sources", 2022 10th IEEE R-10 Humanitarian Technology Conference (R-10 HTC). (*Accepted*).
- **Hassan, K. M. N.** et al., "ALSNet : A Dilated 1-D CNN for Identifying ALS from Raw EMG Signal," ICASSP 2022 - 2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2022, pp. 1181-1185, doi : 10.1109/ICASSP43922.2022.9747366.
- **Hassan, K. M. N.**, Biswas, S.K. and Uddin, M. F., "Electrical Power Consumption Profile Modelling of Air Conditioner for Smart Grid Load Management," 2020 11th International Conference on Electrical and Computer Engineering (ICECE), 2020, pp. 178-181, doi : 10.1109/ICECE51571.2020.9393101.
- **Hassan, K. M. N.**, Anwar, M.S., Siam, M.S.I. and Shahnaz, C., 2019, November. A Dual-Purpose Refreshable Braille Display Based on Real Time Object Detection and Optical Character Recognition. In 2019 IEEE International Conference on Signal Processing, Information, Communication & Systems (SPICSCON) (pp. 78-81). IEEE.
- Qayyum, A.B.A.A., Anika, A., Miah, M.M.M., Rahman, M.M., **Hasan, K. M. N.**, Islam, M.T., Shouborno, S.A.I., Shadiq, M.F. and Haque, M.A., 2019, November. Direction of Arrival Estimation through Noise Suppression : A Novel Approach using GSC Beamforming and Room Acoustic Simulation. In 2019 IEEE International Conference on Signal Processing, Information, Communication & Systems (SPICSCON) (pp. 104-108). IEEE.

Journal Publications

- **Hassan, K. M. N.**, Biswas, S.K. and Uddin, M. F., "Peak Load Reduction in Smart Grid by a Hybrid Algorithm for ON-OFF Scheduling of Large Scale Air Conditioning System", Elsevier Sustainable Energy, Grids and Networks. (*Submitted*).
- Uddin, M. F., **Hassan, K. M. N.**, and Biswas, S.K., "Peak load minimization in smart grid by optimal coordinated ON&OFF scheduling of air conditioning compressors." Sustainable Energy, Grids and Networks 28 (2021) : 100545.
- Qayyum, A.B.A., **Hassan, K. M. N.**, Anika, A., Shadiq, M.F., Rahman, M.M., Islam, M.T., Imran, S.A., Hossain, S. and Haque, M.A., 2020. DOANet : a deep dilated convolutional neural network approach for search and rescue with drone-embedded sound source localization. EUR-ASIP Journal on Audio, Speech, and Music Processing, 2020(1), pp.1-18.

AWARDS/HONORS

- **Recipient**, Post-graduate fellowship (M.Sc.), 2021-Present
Department of Electrical and Electronic Engineering (EEE), Bangladesh University of Engineering and Technology (BUET)
- **Second Runner-up**, IEEE Signal Processing (SP) Cup, 2020
Unsupervised abnormality detection by using intelligent and heterogeneous autonomous systems
Final at the 45th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2020, Barcelona, Spain
[Competition Overview Magazine](#)
- **First Runner-up**, IEEE Video and Image Processing (VIP) Cup, 2019
Activity Recognition from Body Cameras
Final at the 26th IEEE International Conference on Image Processing (ICIP) 2019, Taipei, Taiwan
[Competition Overview Magazine](#)
- **Champion in Bangladesh Section & World Finalist**, Innovation Challenge, IEEE YE-SIST12, 2019
Project- Third Eye : A braille display based on real time object detection
Final at Stamford University, Hua Hin, Thailand
- **10th in the World Ranking**, IEEE Signal Processing (SP) Cup, 2019
Search & rescue with drone-embedded sound source localization
- **Champion**, Inter University Poster Presentation, Esonance, 2017
Project name : PowerGym
Islamic University of Technology(IUT)

PROJECTS

Ongoing Projects

- Intelligent Dialogue Management of SocialBot
- Audio Source Separation
- Audio Event Detection
- Audio Representation Learning
- Synthetic Speech Attribution

Notable Earlier Projects

- Identifying Amyotrophic Lateral Sclerosis (ALS) from raw EMG Signal
- Peak load minimization of air conditioners connected to a Smart Grid (SG)
- Search & Rescue with Drone-Embedded Sound Source Localization
- Activity Recognition from Body Cameras
- Refreshable Braille Display Based on Real Time Object Detection and Optical Character Recognition
- Electrical Power Consumption Profile Modelling of Air Conditioner for Smart Grid Load Management
- Unsupervised abnormality detection by using intelligent and heterogeneous autonomous systems
- Real Time English (British) Sign Language to Bengali Sign Language Translation System

TECHNICAL
STRENGTHS

Operating systems : MacOS, Windows, Linux.

Programming languages : C, C++, Python, MATLAB, AMPL, Octave HTML.

Office softwares : Microsoft Office, LaTeX.

Deep Learning API & platforms : PyTorch, Keras, Tensorflow, Kaggle, Google Colab.

Version Control Systems : GitHub, GitLab.

Circuit Simulators : Proteus.

Languages : Bengali, English.

PROFESSIONAL
ORGANIZATIONS

- **Vice-Chairperson**, IEEE Signal Processing Society BUET SB Chapter, 2019-2021
- **Member**, IEEE Signal Processing Society, 2017-Present
- **Student Member**, IEEE, 2017-Present

REFERENCES

- **Dr. Mohammad Ariful Haque**, Professor
Department of Electrical and Electronic Engineering (EEE)
Bangladesh University of Engineering and Technology (BUET)
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- **Dr. Md. Forkan Uddin**, Professor
Department of Electrical and Electronic Engineering (EEE)
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- **Dr. Celia Shahnaz**, Professor
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