

Sadi Mohammad Siddiquee

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Citizenship : Bangladesh

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Academic History

Bangladesh University of Engineering and technology, Dhaka.

2015-2020

Bachelor of Science, Electrical and Electronic Engineering.

Research History

Research Assistant, Center for Computational and Data Science (CCDS), Independent

Feb 2022-Feb 2023

University, Bangladesh.

- Worked on Semi-Supervised Based segmentation for Ultra high resolution image. Evaluating on satellite data from bangladesh.
- Worked on a CT image based fracture detection model.

Research Assistant, Department of Biomedical Engineering, Bangladesh University of Engineering and technology, Dhaka.

April 2020-Jan 2021

- Worked on Project RadAssist: A Web-based and Artificial Intelligence enabled tele-radiology solution.
- Developed a novel algorithm for Covid-19 pneumonia severity detection.
- Worked with Bangabandhu Sheikh Mujib Medical University Hospital(BSMMU), Dhaka for Covid-19 data collection and annotation.

Bengali.AI Handwritten Grapheme Classification

- Developed Common Bengali Handwritten Graphemes in Context Dataset with a team consisting of more than 50 people. [Dataset Introductory Booklet](#)
- Established an open-sourced pipeline for Handwritten Dataset preparation. [Github](#)
- Benchmarked the Dataset by state of the art pre-trained models.

April 2019-April 2020

Academic Research Work

- **A Deep Convolutional-Snake Model Combination for Breast Ultrasound Image Segmentation, Bachelor's Thesis, BUET.**

Feb 2015-Feb 2020

 - Implemented end to end Benchmarking segmentation models.
 - Performed Elastic Transforms for synthatic data generation and custom activation function from Noisy Activation Functions Gulcehre et al. 2016.
 - Devised a novel way of integrating CNN-based model and active contour model for cancer cell segmentation with better spatial resolution.
 - Improved score compared to the benchmarking models in every evaluation metrics.
- **ECG, EEG and PPG based non-invasive Blood Pressure measurement, Digital Signal Processing Lab, BUET.**

Worked on a novel blood pressure (BP) estimation method based on pulse transit time (PTT) and pulse arrival time (PAT) to estimate the systolic BP (SBP) and the diastolic BP (DBP). [Project Report](#)
- **Automation of Dealer in Card games, Microprocessor and Interfacing Lab, BUET.**

Developed an automatic dealer systems for card games like blackjack using Raspberry Pi, Pi camera module, OpenCV and template matching. [Project Video](#)
- **Self Balancing Robot, Control Systems Lab, BUET.**

Worked on developing a self balancing robot using arduino.

Publications

- Samiul Alam, Tahsin Reasat, Asif Shahriyar Sushmit, **Sadi Mohammad Siddiquee**, Fuad Rahman, Mahady Hasan, Ahmed Imtiaz Humayun, "*A Large Multi-Target Dataset of Common Bengali Handwritten Graphemes*", International Conference on Document Analysis and Recognition(ICDAR), Lausanne, 2021. Available at [Springer](#).
- Nusrat Binta Nizam, **Sadi Mohammad Siddiquee**, Mahbuba Shirin, Mohammed Imamul Hassan Bhuiyan, Taufiq Hasan, "*COVID-19 Severity Prediction from Chest X-ray Images Using an Anatomy-Aware Deep Learning Model*", Journal of Digital Imaging, 2023. Available at [Springer](#).
- **Sadi Mohammad Siddiquee**, Md. Kamrul Hasan. "*A Deep Convolutional-Snake Model Combination for Breast Ultrasound Image Segmentation*". (Bachelor's Thesis), Bangladesh University of Engineering and technology, Dhaka, 2020. Available at [Github](#).

Leadership Experience

Coordinator, Bengali.AI, Dhaka, Bangladesh.

Bengali.AI is an organisation with non-profit vision from Bangladesh that is focused on building crowd-sourced, metadata rich datasets and **open-sourcing** them through research competitions on Kaggle. My involvements -

- Build a Dataset on Common Bengali Handwritten Graphemes in Context.
- Landed **Kaggle Research Grant** for a featured research competition (worth 120K USD) inservices on the Kaggle Platform. [Competition](#) stayed online from Dec 2019 – Mar 2020.
- Raised Fund for prize money (10k USD) from a renowned Silicon Valley based industry.
- Organised launching ceremony and media outreach of Bengali.AI Handwritten Grapheme Classification Competition on National Press Club, Dhaka. Dr. Md. Kaykobad and Dr. Shishir Bhattacharjee was among the panelist members. [Press Release](#)
- Published a paper on Common Bengali Handwritten Graphemes Dataset and its experimentation at **ICDAR 2021**.

Chairperson, IEEE SPS BUET Student Branch

Worked with IEEE BUET Student Branch and Signal Processing Society(SPS) BUET Chapter for more than two long years.

Awards and Grants

Champion, International Humanitarian Technology Project Competition (IHTPC) 2017.

International Humanitarian Technology Project Competition (IHTPC) 2017, organised by IEEE Humanitarian Activities Committee and IEEE Bangladesh Section was a day long project showcasing event where more than 50 projects was displayed. Our team *Team Ellipse* came out top in that event. Project title was "Personalized Health Monitoring Assistance". [Project Report](#)

Kaggle Research Grant, 2019.

Landed Kaggle Research Grant with Bengali.AI co-organizers for a featured research competition (worth 120K USD) inservices on the Kaggle Platform. [Sponsorship Booklet 2019](#)

Higher Secondary Board Scholarship, 2015.

Awarded with board scholarship from Bangladesh Education Board in 2015 for results in higher secondary curriculum.