

# Arnab Sen Sharma

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## Research Interests

Data Science, Computer Vision, NLP. Particulaly, the applications of Data Science and Machine Learning for social good.

## Education

Shahjalal University of Science and Technology (SUST)

April, 2014 - November, 2018

BSc(Engg.) in Computer Science and Engineering

CGPA: **3.91/4.00** (Class rank: **1**, class of 2013)

## Test Scores

- GRE (Verbal: 165, Quant: 170, AWA: 4.0)
- TOEFL (Writing: 29, Listening: 30, Reading: 30, Speaking: 24)

## Publications

- Md. Enamul Hoque, Md. Shariful Islam, **Arnab Sen Sharma**, Rashedul Islam, and Mohammad Ruhul Amin. 2021. "Challenges in Tracking the Risk of COVID-19 in Bangladesh: Evaluation of A Novel Method". In Proceedings of August 15 (KDD Workshop on Data-driven Humanitarian Mapping, 27th ACM SIGKDD Conference). ACM, New York, NY, USA. *Kindly check out my [5-minute talk](#) on this paper prepared for this conference.*
- **Sharma, A. S.**, Roy, T., Rifat, S. A. & Mridul, M. A. (2021). "Presenting a Larger Up-to-Date Movie Dataset and Investigating the Effects of Pre-Released Attributes on Gross Revenue." Journal of Computer Science, 17(10), 870-888. DOI: 10.3844/jcssp.2021.870.888.
- **A. S. Sharma**, M. A. Mridul and M. S. Islam, "Automatic Detection of Satire in Bangla Documents: A CNN Approach Based on Hybrid Feature Extraction Model", 2019 International Conference on Bangla Speech and Language Processing (ICBSLP), Sylhet, Bangladesh, 2019, pp. 1-5, doi: 10.1109/ICBSLP47725.2019.201517. [**IEEE Best Paper Award**, awarded by ICBSLP, 2019]
- **A. Sen Sharma**, M. Ahmed Mridul, M. Jannat and M. Saiful Islam, "A Deep CNN Model for Student Learning Pedagogy Detection Data Collection Using OCR", 2018 International Conference on Bangla Speech and Language Processing (ICBSLP), Sylhet, 2018, pp. 1-6, doi: 10.1109/ICBSLP.2018.8554701.

## Experiences

- **Research Associate, Natural Language Processing research groups, SUST** *August 2019 - Present*
  - ◊ Co-authored and served as Principal Investigator on a project entitled "A BiLSTM based Deep Learning Approach for Hate Speech Detection in Bangla Text and a Benchmark Dataset for Hate Speech in Bangla". The proposed project won a research grant worth 2,30,000 BDT from SUST Research Centre (Project ID: AS/2020/1/26). A portion of this work is available as [preprint](#).
- **Lecturer, Department of CSE, SUST** [[Faculty Profile](#)] *July 2019 - Present*
  - ◊ **Taught Courses:** Database Management Systems, Software Engineering and Design Patterns, Web Technologies.
  - ◊ Served as a member of *Undergrad Final Year Thesis/Project Evaluation Committee*, Session 2019-20, 2020-21.
- **Software Engineer, Samsung R&D Institute, Bangladesh** *September, 2018 - June, 2019*
  - ◊ Robot simulation project. Controlling movements and actions of a robot using Samsung Galaxy Tab S4. Also, object detection and recognition tasks using *YOLOv3* for robot navigation.
  - ◊ Baby crying sound detection on Android devices using *Tensorflow Lite*.
  - ◊ Sensor data collection from smart devices and their application in detecting gestures and biometric properties.
  - ◊ Understood the codeflow of certain parts of the *multimedia* and *V8* modules of *chromium-efl*.
  - ◊ Understood storage system for various cross platform cellular devices.

## Ongoing Research works and Collaborations

- Hate Speech Modeling in Social Media Platforms. [[preprint](#)]
- Calculating Attention Score of Online Classes by Tracking Students' Gaze on Screen, under supervision of Dr. Mohammad Ruhul Amin, Assistant Professor, Fordham University. [[github](#)]
- COVID-19 Research
  - ◊ *Risk Assessment and Forecasting*, with Dr. Md Enamul Hoque, Associate Professor, SUST; Dr. Md. Shariful Islam, Assistant Professor, NSU; and Dr. Mohammad Ruhul Amin, Assistant Professor, Fordham University.
  - ◊ *Tracking COVID-19 cases in Bangladesh via Participatory Syndromic Surveillance System*, project under supervision of Dr. Mohammad Ruhul Amin, Assistant Professor, Fordham University.

## Honors and Awards

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- Secured 3rd place in **SAMSUNG Research ROBOT HACKATHON-2018** as part of the team **SRBD\_Hyperbola**.
- **Notable Performances on Onsite Programming Contests**
  - ◊ ACM ICPC ASIA Regional, Dhaka Site 2017, Rank : 21, (SUST\_PeakSeeker)
  - ◊ ACM ICPC ASIA Regional, Dhaka Site 2016, Rank : 11, (SUST\_DeapThunder)
  - ◊ IUBAT IUPC, Rank : 4 , (SUST\_DeapThunder)
  - ◊ BSCCL National Programming Contest (Hackathon) at UITS, Rank : 6, (SUST\_1)
  - ◊ LU Inter University Programming Contest 2016, Rank : 4, (SUST\_BlackJAM)

## Projects

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- **COVID-19 in Bangladesh** [github] - An interactive website built with *ReactJS* and *Flask* to showcase our work on tracking and forecasting COVID-19 situation in Bangladesh. The site is live at [erdos.dsm.fordham.edu:3000](http://erdos.dsm.fordham.edu:3000). *Kindly check the site from a desktop/laptop/tab. The site is not optimized for smartphone screens.*
- **Sentece Similarity Measurement for Bangla** [github] - Experimented with Siamese Neural Network architecture to calculate a similarity score between 2 sentence written in Bangla.
- **Algorithm Simulator** [github] - A desktop application aiming to help newbie competitive programmers to get a basic understanding of vastly used basic algorithms, data structures and different kinds of sorting techniques.
- **DareIt?!** [github] - An arcade game for android platform.
- **Travel Santa** [github] - A web application aiming to help tourists to find hotels and restaurants near tourist spots.
- **Shurodhwani** [github] - An online audio sharing and listening platform.
- **EduHelper** [github] - A web application aiming to help teachers in making and sharing tutorials.
- Web Scrappers built for different purposes - [IMDb](#), [BoxOfficeMojo](#), [CodeForces](#), [AtCoder](#), [VJudge](#), [Scrappers built for preparing dataset for Bengali sarcasm detection from text.](#)
- Other projects include - [BoxOffice Revenue Prediction](#), [Biometrics using Smartphone Sensors](#), [GRE Flashcard](#), [Bangla Handwritten Digit Classification for a Kaggle Contest](#).

## Technical Skills

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- **Languages:** Python, C++, JAVA
- **ML Libraries:** TensorFlow, PyTorch
- **Web Frameworks:** ReactJS, Flask, Django, Laravel-5
- **Tools/IDEs:** Anaconda, Android Studio, Unity2D
- **Utilities:** GIT, L<sup>A</sup>T<sub>E</sub>X

## Services and Volunteer works

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- Conducted workshops on basic Data-Science and Machine Learning concepts for undergrad students of CSE department, SUST.
- Advising undergrad students who are conducting research in Data Science and Machine Learning related domains.
- Competitive Programming Trainer for undergraduate students of CSE Department of SUST and CSE Department of Sylhet International University.
- Set competitive programming problems and wrote alternate solutions for several programming contests including NEUB Junior Inter University Programming Contest-2017, Varendra University Inter University programming contest-2017, and SUST Intra University Programming Contest-2017.
- Serving as a core member of the Consultant Team on the project *Development of Health Service Management System for Sylhet M A G Osmani Medical College Hospital*. Responsibilities include monitoring the requirement collection and architecture design of the project.
- Served as core member of the *Technical Sub-committee*, SUST Admission 2021.

## References

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**Dr. Mohammad Ruhul Amin**  
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Fordham University, NY  
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