

## Education

- 2016 – 2020 **Heritage Institute of Technology, Kolkata,**  
(Expected) *Information Technology, Bachelor of Technology, CGPA – 8.96/10.*
- 2015 **St. Xavier's Institution, Panihati,**  
*Class XII, Indian School Certificate (ISC), Aggregate – 83.0%.*
- 2013 **St. Xavier's Institution, Panihati,**  
*Class X, Indian Certificate of Secondary Education (ICSE), Aggregate – 82.4%.*

## Other Scores

- Jul 2019 **GRE,**  
*324/340, (Verbal: 158, Quant: 166, AWA: 5/6).*
- Aug 2019 **TOEFL,**  
*111/120, (Reading: 27, Listening: 29, Speaking: 27, Writing: 28).*

## Relevant Coursework

Data Structure, Design & Analysis of Algorithms, Graph Theory & Algebraic Structures, Calculus, Operations Research, Image Processing, Pattern Recognition, Data Mining, Computer Network, Numerical and Statistical Methods, Computer Architecture, Computer Organization, Operating Systems

## Work Experiences

- Apr 2019 - **Indian Statistical Institute, Kolkata, Undergraduate Visiting Research Intern.**  
Ongoing ○ Project: **Air Writing**
- Jan 2019 **Skymap Global Pvt. Ltd, Winter Intern.**  
○ Project: **SkyPilot**
- Jun – Jul **New Jersey Institute of Technology, Summer Research Student.**  
2018 ○ Project: **MetaCap**
- Jun 2012 **As Samad Chem Pvt. Ltd, Freelance Programmer.**  
○ Project: **Iqra-e-Quran**

## Projects

- Oct 2019 **SAFEDUN, [GitHub].**  
○ Image scrambling tool using chaotic map and color channel randomization.  
○ Conducted under the supervision of Professor Joydev Hazra, Heritage Institute of Technology, Kolkata.
- Apr – Nov **Air Writing, [Preprint] [Presentation] [ISI-Air Dataset].**  
2019 ○ Developed a system which allows users to trace numeric inputs in air in a continuous motion without the use of any external sensors.  
○ Created, collected and processed ISI-Air, an online air-written English numeral dataset.  
○ Conducted under the supervision of Prasun Roy and Dr. Umapada Pal, CVPR Unit, Indian Statistical Institute.
- Mar – Jun **Express-Cap.**  
2019 ○ Experimented with various Deep Learning techniques with special emphasis on facial emotion recognition to build an attention-based image captioning system.  
○ Conducted under the supervision of Professor Joydev Hazra, Heritage Institute of Technology, Kolkata.
- Mar 2019 **Smart India Hackathon, 2019, [Schematic].**  
○ Qualified for the Grand Finale of SIH 2019 where we devised a system for digital extraction of off-cut plate shapes from metal sheets along with their organized inventory storage and re-use.

- Jan 2019 **SkyPilot**, [Abstract].
- o Improved MissionPlanner's grid system, integrated custom UAV firmware for simulation, and redesigned the user interface to fit proprietary requirements.
- Sep – Oct 2018 **NASA Space Apps Challenge, 2018**, [Poster].
- o Secured the 1st prize in the regional round for building an application to compute the radiation exposure of a passenger onboard a flight, given its altitude and trajectory.
  - o In the finals, processed datasets from NSIDC to visualize changes in sea level, ice area, and ice age around the polar regions to raise awareness for climate change.
- Jun – Jul 2018 **MetaCap**, [Poster] [Abstract].
- o Developed an extension of Jenkins to capture metadata in a continuous integration workflow.
  - o Conducted under the supervision of Dr. Reza Curtmola, New Jersey Institute of Technology, Newark.
- Oct 2017 **StegCrypt**.
- o Implemented MultiLSB algorithm to create a tool to hide data within various media.
  - o Conducted under the supervision of Professor Rajib Biswas, Heritage Institute of Technology, Kolkata.
- Sep 2017 **Stocker**.
- o Developed a tool to monitor and obtain raw stock data from NSE/BSE markets into a spreadsheet with customizable scheduling options.
  - o Conducted under the supervision of Professor Hemanta De, Heritage Institute of Technology, Kolkata.
- Jun 2012 **Iqra-e-Quran**, [Media Coverage].
- o Designed a system to extract individual speaker audio clips from large audio datasets of Quran translation and encode the extracted audio clips based on the specific MICR coding format.
  - o The generated data was used in IEQ, a product of As Samad Chem Pvt. Ltd, which uses MICR to read the Quran.

## Publications

- Agarwal, R., Patwari, A., Khandelwal, A., **Rahman, A.**, Hazra, J.: *Express-Cap: Efficient Visual Caption Generation with Emotions*. In: Pattern Recognition Letters. [Under Review]
- 2019 **Rahman, A.**, Roy, P., Pal, U.: *Continuous Motion Numeral Recognition using RNN Architecture in Air-Writing Environment*. In: 5th Asian Conference on Pattern Recognition (ACPR 2019). (**Oral ~13%**) [Accepted] [Preprint]
- 2018 **Rahman, A.**, Curtmola, R.: *Capturing the Metadata in Continuous Integration Workflows*. In: NJIT's Book of Abstracts, Eleventh International Undergraduate Summer Research Symposium. pp. 101. [Abstract]

## Leadership & Activities

- Oct 2018 Conducted a workshop on UX/UI Designing at Heritage Institute of Technology, Kolkata
- 2017 – 2018 Treasurer of Rotaract Club of Altruism
- 2016 – 2017 Editor of Rotaract Club of Altruism
- 2016 Class Representative of IT Department at Heritage Institute of Technology, Kolkata
- 2016 - 2018 Community Outreach: Taught science, mathematics, computer and guitar to local community children
- 2010 – 2015 Local Self Government Executive at St. Xavier's Institution, Panihati

## Technical Skills

- Languages Python, Java, C, C#, MATLAB/Octave, R, ActionScript
- Web HTML, CSS, JavaScript, TypeScript, Angular, Node.js, jQuery, JSP
- Databases MongoDB, MySQL, SQLite
- Others LaTeX, Git, Maven, VHDL

## Personal Skills

- Languages English, Hindi, Bengali, Urdu
- Creativity Guitar, Ukulele, Electronic Music Production, Graphic Designing, Photography
- Hobbies Gaming, Singing, Creative Writing, Reading, Typing