

Townim Faisal Chowdhury

Website | Github | Google Scholar

Email: faisal.townim@gmail.com

EDUCATION

- **North South University** Dhaka, Bangladesh
Bachelor of Computer Science & Engineering, CGPA: 3.91
Jun. 2017 - Aug. 2020
Specialization Courses: Deep Learning, Machine Learning
 - Awarded summa cum laude
 - Achieved 75% merit-scholarship during admission

RESEARCH INTERESTS

Computer Vision, Deep Learning, Medical Image, Artificial Intelligence, Machine Learning

PROGRAMMING SKILLS

- **Languages:** Python, C++, JavaScript, Bash, Java, R, PHP
- **ML Libraries:** Pytorch, TensorFlow, Keras, Pandas, Numpy, Matplotlib, OpenCV, Scikit-Learn
- **Web Frameworks:** Flask, Laravel, React, Electron js
- **Tools & Platforms:** Git, Docker, AWS-S3, GCP, DVC
- **Database:** MySQL, MongoDB

RESEARCH & TEACHING EXPERIENCE

- **North South University** Dhaka, Bangladesh
Research Assistant, Supervisor: Dr. Shafin Rahman
Jan. 2020 - Present
Research Area: Computer Vision, Deep learning
 - Explored zero shot learning on 3D point cloud data and 2D images following both transductive and inductive setting.
 - Investigated the advantage of semantic embeddings in the knowledge distillation process for 3D point cloud objects during continual learning.
- **North South University** Dhaka, Bangladesh
Research Assistant, Supervisor: Dr. Ahsanur Rahman
Oct. 2020 - Mar. 2020
Research Area: Algorithm, Graph mining, Machine learning
 - Experimented and analyzed an algorithm to compute dense subgraphs in generated synthetic and real graphs.
 - Participated in Allen Institute Cell Lineage Reconstruction DREAM Challenge and solved first sub-challenge.
- **North South University** Dhaka, Bangladesh
Teaching Assistant, Department of Electrical & Computer Engineering
Feb. 2020 - Present
Courses Assisted: CSE 215: Introduction to Java, CSE 373: Design and Analysis of Algorithms, CSE 445: Machine Learning
 - Conducted tutorial sessions for students needing extra help outside of class hours.
 - Graded assignments, home works and assisted faculty members with their course related works.

PROFESSIONAL EXPERIENCE

- **Brain Station 23** Dhaka, Bangladesh
Associate Software Engineer (ML Developer)
Jun. 2019 - Present
 - Worked on Face Anti Spoofing detection with Face Verification for online eKYC application.
 - Developed Bangla optical character recognition (OCR) to verify the data on National ID (NID) card with help of object detection algorithm.
 - Established an automated recruitment system where an organization takes every type of examination for their future employees.
- **SEPS, North South University** Dhaka, Bangladesh
Web Developer (Part-time)
Mar. 2018 - Feb. 2019
 - Developed a web application following a micro-service-based architecture to manage four of the departments in SEPS.
 - Maintained current system with updating the system with new software requirements based on the department's need.
- **Rokomari** Dhaka, Bangladesh
Intern Software Engineer
Sep. 2016 - Nov. 2016
 - Developed a common platform for publishers to maintain their inventories and integrated it to their e-commerce system.
 - Worked on their performance appraisal system to enhance it's functionality and features.

SELECTED PROJECTS

- **Deep Neural Network based Lipid Profile Prediction:** This study is aimed to develop an artificial neural network (ANN) based model with various input combinations to predict lipid profiles of the US adults using non-invasive and low-cost diagnostic features. This project was supervised under the supervision of Juwel Rana, Lecturer in Department of Public Health, North South University. *Technology:* R, ggplot, h2o & shiny. (*project link*)
- **Hyperparameter Analysis For Image Captioning Based On Different Languages:** We analyzed different hyperparameter combinations for two state-of-the-art image captioning models based on different languages: chinese, bangla and english and tried to find suitable combinations of hyperparameters with this analysis. This project was supervised under the supervision of Dr. Md Shahriar Karim, Assistant Professor, North South University. *Technology:* Python, PyTorch, Scikit-learn & Numpy. (*project report*)
- **A Web App for Transportation and Carpooling Mangement in Bangladesh:** In this work, we designed and implemented a web-app to make the major services provided by BRTA easily accessible from anywhere, has the potential to reduce cost, environment pollution, and traffic congestions via carpooling, and ensures transparency among all the stakeholders: BRTA, vehicleowners, drivers, and passengers. *Technology:* PHP, Laravel, MySQL, OpenLayer, pgRouting & postGIS. (*project report*)

PUBLICATIONS & PREPRINTS

- T. Chowdhury, M. Jalisha, A. Cheraghian, and S. Rahman,, “Learning without Forgetting for 3D Point Cloud Objects,” submitted and under review in *International Work-Conference on Artificial Neural Networks*, 2021
- A. Cheraghian, S. Rahman, T. F. Chowdhury, D. Campbell, and L. Petersson, “Zero-shot learning on 3d point cloud objects and beyond,” *arXiv preprint arXiv:2104.04980*, 2021 (submitted and under review in *IJCV: Special Issue on 3D Vision*, 2021)
- K. Roy, T. F. Chowdhury, R. Maliha, and A. Rahman, “Quasi-Clique Enumerator (QCE): A Fast Algorithm to Enumerate Maximal Quasi-cliques in a Graph,” rejected in *SIGKDD*, 2021

CERTIFICATIONS

- **Deep Learning Specialization**

- Issued by: *deeplearning.ai*. Certification URL: (*Link*)

Apr. 2020

ACHIEVEMENTS

- Ranked **7th position (out of 28 teams and more than 100 participants)** in the sub-challenge 1 of **Allen Institute Cell Lineage Reconstruction DREAM Challenge**, organized by Allen institute, CalTech, IBM Research, Sage Bionetworks, USA. (*Mar. 2020*)
- Achieved **75% merit-based tuition waiver** in the admission of North South University, Bangladesh. (*Apr. 2017*)