

Research Interest: Deep Learning, Computer Vision, Generative Adversarial Networks, Biometric Technology, Natural Language Processing

Education

University of Calgary

Alberta, Canada

M.Sc. in Computer Science - Thesis Based

Sep. 2020 - *

- Currently working on Biometric technologies using Deep Learning.

University of Asia Pacific

Dhaka, Bangladesh

B.Sc. in Computer Science and Engineering

May. 2014 - Mar. 2018

- Thesis Title:** End to End Optical Character Recognition Using Deep Learning. - LinkLink
- As the outcome of the thesis, two conference paper was published.

Experience

Biometric Technologies Lab, University of Calgary

Alberta, Canada

RESEARCH ASSISTANT

Sep. 2020 - *

- Working as a Research Assistant at Biometric Technologies Lab.
- Supervisor:** Prof. Dr. Marina Gavrilova.
- Research Work:** Graph Neural Networks, Gait Recognition, Multi-modal biometrics de-identification.

Department of Computer Science and Engineering, University of Asia Pacific

Dhaka, Bangladesh

LECTURER

Sep. 2018 - Aug. 2020

- Courses Conducted:**
 - 1) Introduction to Computer Science and Programming Methodologies, 2) Structured Programming, 3) Data Structures, 4) Pattern Recognition
- Associated with Career Development Club and Programming Contest Club

Department of Computer Science and Engineering, University of Asia Pacific

Dhaka, Bangladesh

TEACHING ASSISTANT

Apr. 2018 - Aug. 2018

- Courses Assisted:**
 - 1) Introduction to Computer Science and Programming Methodologies, 2) Structured Programming, 3) Algorithms, 4) Object Oriented Programming II

Gaze Inc.

Dhaka, Bangladesh

DEEP LEARNING ENGINEER

May. 2017 - Mar. 2018

- Built computer vision and natural language processing based software applications.
- Vehicle Number Plate Detection and Recognition using End to End Approach

Machine Learning Lab, University of Liberal Arts Bangladesh

Dhaka, Bangladesh

RESEARCH ASSISTANT

Feb. 2017 - Jan. 2018

- Developed an Android application for ICT Ministry of Bangladesh to increase the aesthetic beauty of handwriting.
- Collected one of the largest Bangla handwritten character dataset which can be used for multiple purpose. The dataset was named "BanglaLekha-Isolated".
- Proposed a deep learning based baseline solution for BanglaLekha-Isolated.

Volunteering

Schulich Ignite

Alberta, Canada

MENTOR

Sep. 2020 - *

- Purpose:** Free computer coding courses led by University of Calgary student mentors
- Responsibility:** Mentoring programming enthusiast students about programming and debugging.

Computer Science Graduate Society, University of Calgary

Alberta, Canada

VICE PRESIDENT - SOCIAL

Sep. 2020 - *

- Purpose:** To promote student activity in UofC computer science graduate community
- Responsibility:** Organize different social events and activities.

Prospective Bangladeshi Students in Canadian Universities (PBSCU)

Dhaka, Bangladesh

MENTOR

Aug. 2020 - *

- A non profit organization aiming to change the attitudes towards higher studies in Canada for prospective students
- As a mentor, my responsibility is to mentor prospective students about their journey towards studying in Canada. From SOP writing to visa applications I help prospective students.

Career Development Club, CSE-UAP

CONVENER

- Organized Several Workshops, seminars and job fair
- One to one career counseling
- Connecting existing students with alumni

Dhaka, Bangladesh

Sep. 2018 - Aug. 2020

Programming Contest Club, CSE-UAP

Co CONVENER

- Organized two intra department programming contest
- Organized training camps for undergraduate students
- Guiding problem solvers to debug problems

Dhaka, Bangladesh

Sep. 2018 - Aug. 2020

Programming Contest Club, CSE-UAP

PRESIDENT

- Handled day-to-day activities for the club
- Setting practice contests and team formation contests

Dhaka, Bangladesh

Jan. 2017 - Mar. 2018

Paper and Publications

Book Chapter

1. **Md Shopon**, ASM Hossain Bari, Yajurv Bhatia, Pavan Karkekoppa Narayanaswamy, Sanjida Nasreen Tumpa, Brandon Sieu, and Marina Gavrilova, "Biometric System De-Identification: Concepts, Applications, and Open Problems", Handbook of Artificial Intelligence in Healthcare, Springer Nature, 2021

Journal

1. Biswas, M., Islam, R., Shom, G. K., **Shopon, M.**, Mohammed, N., Momen, S., & Abedin, A. (2017). Banglalekha-isolated: a multi-purpose comprehensive dataset of handwritten bangla isolated characters. Data in brief, 12, 103–107.

Conference Papers

1. **Shopon, M.**, Mohammed, N., & Abedin, M. A. (2016). Bangla handwritten digit recognition using autoencoder and deep convolutional neural network. In Computational intelligence (iwci), international workshop on (pp. 64–68). IEEE.
2. **Shopon, M.**, Mohammed, N., & Abedin, M. A. (2017). Image augmentation by blocky artifact in deep convolutional neural network for handwritten digit recognition. In Imaging, vision & pattern recognition (icivpr), 2017 IEEE international conference on (pp. 1–6). IEEE.
3. **Shopon, M.**, Adnan, M. A., & Mridha, M. F. (2016). Krill herd based clustering algorithm for wireless sensor networks. In Computational intelligence (iwci), international workshop on (pp. 96–100). IEEE.
4. Mahmud, A., Akhtaruzzaman, A., & **Shopon, M.** (n.d.). An incremental clustered gradient method for wireless sensor networks. In 21st Saudi Computer Society National Computer Conference. IEEE
5. Ahmed, S., Islam, M., Hassan, J., Ahmed, M. U., Ferdosi, B. J., Saha, S., & **Shopon, M.** (2019). Hand Sign to Bangla Speech: A Deep Learning in Vision based system for Recognizing Hand Sign Digits and Generating Bangla Speech. 2019 International Conference on Sustainable Computing in Science, Technology & Management (SUSCOM-2019).
6. **Shopon, M.**, Diput, N.H., & Mohammed, N. (2019). End to End Optical Character Recognition Using Synthetic Dataset Generator For Noisy Conditions. In International Joint Conference on Computational Intelligence, IJCCI 2019.
7. Nishat, Z.K. & **Shopon, M.** (2019). Unsupervised Pretraining and Transfer Learning Based Bangla Sign Language Recognition. In International Joint Conference on Computational Intelligence, IJCCI 2019.
8. Nishat, Z.K. & **Shopon, M.** (2019). Synthetic Class Specific Bangla Handwritten Character Generation Using Conditional Generative Adversarial Networks. In International Conference on Bangla Speech and Language Processing, ICBSLP 2019.
9. **Shopon, M.**, Bidirectional LSTM with Attention Mechanism for Automatic Bangla News Categorization In Terms of News Captions, in INTERNATIONAL CONFERENCE ON ELECTRONIC SYSTEMS AND INTELLIGENT COMPUTING (ESIC2020), Springer
10. Karim, A., Razin, J., Ahmed, N., **Shopon, M.**, Alam, T. (2020). Automatic Violence Detection Method Using Convolution Neural Network. In International Conference On Sentimental Analysis And Deep Learning (ICSADL 2020)
11. Sani, S.H., **Shopon, M.**, Khan, M.H., Hasan, and Mridha, M.F, Short-term and Long-term Air Quality Forecasting Technique Using Stacked LSTM, 6th International Conference on Communication and Information Processing

12. Sani, S.H, **Shopon, M.** Khan. M.H, Hasan, and Mridha, M.F, Air Quality Index Prediction Using Azure IoT & Machine Learning For Smart Cities, International Conference on Computational Intelligence, Data Science and Cloud Computing 2020
13. Shahin.M, Ahmed.T, Rahman.S, **Shopon.M**, Classification of Bangla News Articles Using Bidirectional Long Short Term Memory, IEEE Region 10 Symposium (TENSYP) 2020
14. **Md Shopon**, ASM Hossain Bari, and Marina Gavrilova, "Residual Connection Based Graph Convolutional Neural Networks for Gait Recognition", Computer graphics international, 2021 (Accepted)

Skills

Programming Language	Python, C, C++, Java, Matlab
Programming Problem Solving	Participated in 24 Onsite Contests and solved more than 500 problems in several online judges
Algorithm Expertise	Dynamic Programming, Graph Theory, Number Theory
Hardware	Raspberry Pi, Arduino
Version Controlling	Git
Languages	Bengali, English, Hindi

Honors & Awards

2015	Vice Chancellor's Award - Spring 2015 , Unviersity of Asia Pacific	<i>Dhaka, Bangladesh</i>
2015	Vice Chancellor's Award - Fall 2015 , Unviersity of Asia Pacific	<i>Dhaka, Bangladesh</i>
2015	Champion , UAP Inter Department Programming Contest - 2015	<i>Dhaka, Bangladesh</i>
2015	Vice Chancellor's Award - Spring 2017 , Unviersity of Asia Pacific	<i>Dhaka, Bangladesh</i>
2015	Vice Chancellor's Award - Fall 2017 , Unviersity of Asia Pacific	<i>Dhaka, Bangladesh</i>
2016	Champion - Programming Contest Section , UAP Hardware & Software Exposition - 2016	<i>Dhaka, Bangladesh</i>
2016	Runner Up - Hardware Project Exhibition , UAP Hardware & Software Exposition - 2016	<i>Dhaka, Bangladesh</i>

Program Committees

2019	Problem Writer and Judge , UAP Inter Department Programming Contest - 2019	<i>Dhaka, Bangladesh</i>
2019	Organizer & Head of Technical Committee , 3rd UAP CSE, Software and Hardware Carnival	<i>Dhaka, Bangladesh</i>
2019	Judge , Hackathon Section, 3rd UAP CSE, Software and Hardware Carnival	<i>Dhaka, Bangladesh</i>
2018	Problem Writer and Judge , UAP Inter Department Programming Contest, 2018	<i>Dhaka, Bangladesh</i>
2017	Lead - Technical Team , International Conference on Computer and Information Technology (ICCIT), 2017	<i>Dhaka, Bangladesh</i>
2017	Lead - Technical Team , ACM International Collegiate Programming Contest, Dhaka Regional, 2017	<i>Dhaka, Bangladesh</i>

References

1. Marina L. Gavrilova, Ph.D

- Professor and Associate Head, Department of Computer Science, University of Calgary
- Email: mgavrilo@ucalgary.ca

2. Nabeel Mohammed, Ph.D

- Assistant Professor, Department of Electrical and Computer Engineering, North South University
- Email: nabeel.mohammed@northsouth.edu