Asif Ahmed Neloy

Curriculum Vitae

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Career Interest

Seeking a position in **Data Science, Data Analysis, Algorithms, Data Structure** and **Robotics** where extensive experience will be further developed and utilized. Skilled in **Machine Learning, Probabilistic Statistics, Industrial Problem-Solving, Business Data visualization and Analysis** and **creative thinking**. Commitment to providing support and essential information about trends to companies in a variety of industries and academics.

Research Interest

My primary field of research interest is **Artificial Intelligence (AI)**. Within AI, I am interested in problems related to **Probabilistic Modeling, Applied Machine Learning, Health Data Mining**, and interdisciplinary applications of **Computer Vision** in Robotics. My research revolves around understanding the fundamental principles of statistical machine learning, designing scalable algorithms with guarantees, and rigorously analyzing their computational and information-theoretic properties. Moreover, with the help of modeling and scheme of AI, I have also a substantial overview in the field of Robotics, more precisely – **Design Analysis, Path Finding, Robot Vision, Object Tracking** and application of **Probabilistic Models** to the Segmentation problem.

Education

University of Manitoba
January 2021 – Present

66 Chancellors Cir, Winnipeg, MB R3T 2N2, Canada

- **Master of Science in Computer Science and Engineering (MSc CSE) - Thesis Based**

North South University
January 2015 – December 2018

Bashundhara R/A, Dhaka 1229, Bangladesh

- **Bachelor of Science in Computer Science and Engineering (BS CSE)**
- **CGPA 3.30/4.0 (89% marks)**
- **Specialized Trail**– Artificial Intelligence
- **Thesis**– Early Health Prediction System for ICU Patient using Machine Learning and Cloud Computing

Employment History

Grader/Marker (COMP 1600)
Dept of Computer Science, **University of Manitoba**
January 2021 – Present

66 Chancellors Cir, Winnipeg, MB R3T 2N2, Canada.

- Grades and marks work submitted by students from tests, exams or projects.
- Provides written feedback to the students, on the quality of material presented for grading or marking.
- Meets with the employment supervisor responsible for the course(s), for purpose of orientation and receiving guidelines for grading and marking assignments and for providing written feedback to the students.

Graduate Research Assistant
Dept of Computer Science, **University of Manitoba**   January 2021 – Present
66 Chancellors Cir, Winnipeg, MB R3T 2N2, Canada.
Supervised by Assistant Professor **Max Turgeon**, Ph.D, Dept of Computer science (Cross-appointed),
University of Manitoba.

- Demonstrate data science capabilities through prototypes.
- Research and develop novel algorithms and techniques to advance the state of the art in Health care systems.
- Development of code and experimental platforms, running experiments, and analyzing data using machine learning.

Information Analyst
Advanced Chemical Industries (ACI Ltd.)   January 2020 – January 2021
ACI Centre 245, Tejgaon Industrial Area, Dhaka-1208, Bangladesh.

- Interpret and translate data into valuable information using different machine learning models for effective analysis purposes.
- Analyze client's requirements to provide suggestions in order to deliver products that are aligned with the ultimate business requirement.
- Oversee implementation of a new system, support users in adapting to the system by ensuring proper training and guidelines.

Graduate Research Assistant
Dept of ECE, North South University   January 2019 – January 2021
Bashundhara R/A, Dhaka 1229, Bangladesh.

- Implementing the mechanical design of coupling parts in robotic systems.
- Support the design of materials for the design of rescue robots.
- Work on a research project on the implementation of the navigation algorithm to mobile robots
- Development of code and experimental platforms, running experiments, and analyzing data using machine learning.

Graduate Teaching Assistant
Dept of ECE, North South University   September 2020 – January 2021
Bashundhara R/A, Dhaka 1229, Bangladesh.

- Facilitate a discussion section or tutorial; hold weekly office hours; grade homework, programming assignments, exams, or projects; keep records; distribute and copy reading materials; prepare answer keys or supplementary notes, and act as the course web-master.
- Assisting faculty with record keeping, such as tracking attendance and calculating grades.

Laboratory Officer
Dept of ECE, North South University   May 2019 – January 2021
Bashundhara R/A, Dhaka 1229, Bangladesh.

- Responsible for conducting the lab classes of the enrolled students.
- Lab Coursework includes implementing algorithms and theoretical concepts with respective programming languages as deemed necessary by the course curriculum.
- Also responsible for grading and marking the students in their lab classes.

Undergraduate Teaching Assistant

Dept of ECE, North South University   January 2019 – May 2019

Bashundhara R/A, Dhaka 1229, Bangladesh.

- Facilitate a discussion section or tutorial; hold weekly office hours; grade homework, programming assignments, exams, or projects; keep records; distribute and copy reading materials; prepare answer keys or supplementary notes, and act as the course web-master.
- Assisting faculty with record keeping, such as tracking attendance and calculating grades.

Teaching

North South University   January 2019 – Present

Bashundhara R/A, Dhaka 1229, Bangladesh.

Course	Semester
CSE231L Digital Logic design	Summer 2019
CSE332L Computer Organization and Architecture	Summer 2019
CSE482L Internet and Web Technology	Summer 2019
CSE115L Programming Language I	Summer 2019
CSE331L Microprocessor Interfacing & Embedded System	Spring 2019, Fall 2019, Spring 2020, Summer 2020, Fall 2020
CSE311L Database Management System	Spring 2020, Summer 2020, Fall 2020

Academic Honours and Awards

- Research Assistantship Grant from Dr. Max Turgeon, University of Manitoba.
- The Visual and Automated Disease Analytics (VADA) graduate Trainee Grant.
- Certified Mentor of Robotics and Machine learning.
- Won the 1st Runner Up prize for the Undergraduate Capstone Project, Capstone Innovation Challenge, Season 6, 2018.
- Runner up - IEEE day Hackathon 2017.
- Junior Board Scholarship (Class 8) for excellent academic result.

Technical Skills

Programming and Scripting Languages: Python, C++, C, HTML, XML, SQL, Julia, R, Assembly, Windows Azure, Shell Scripting.
Operating Systems: Windows, Linux.
Data Science Tools: Tableau, SPSS, MATLAB, Apache Spark. Anaconda
Libraries: TensorFlow, PyTorch, Keras, Pandas, Scikit-learn, Scipy, NLTK
Platforms: IBM Cloud, IBM Watson Studio, PyCharm, GIT, Docker, Arduino.
Database Tools: Oracle, MySql, DB2, MS-Access

Workshop or Seminar Conducted

- **Workshop on Robotics (Robo101)**: NSU ACM Student Chapter, Conducted during - **Spring 2017, Fall 2017, Summer 2018.**
- **Workshop on Intro to Machine Learning**: NSU ACM Student Chapter - **Fall 2018**
- **Hour of Code**: Association for Computing Machinery (ACM) - **Fall 2018**

Professional Activities

- **IEEE Student Member**: 94560705
- **ACM Student Member**: 9654439

Research Facility

Founder and Principal Investigator, **TF-ROS** Lab   February 2019 – Present

North South University, Bashundhara R/A, Dhaka 1229, Bangladesh.

- **Members**: 6 undergraduate students of North South University.
- **Funding**: BDT 500000 by Desire Glance Group for the fiscal year 2018-2019.

Language Proficiency	**IELTS: 6.5** (W,R–6.00, L,S–7.00)

Reviewing Experience

Conference:
- *2020 International Symposium on Automation, Information and Computing* (**ISAIC 2020**). Beijing Jiaotong University, Beijing, China, December 2nd-4th, 2020.
- *2019 The Fourth International Conference on Economic and Business Management* (**FEBM 2019**). China October 19-21, 2019.

Journal:
- **CAAI Transactions on Intelligence Technology (2020)**
- **IEEE Access (2020)**

Book Published
- **"Let's make Robots"**, Publisher - **Pinnacle Media**, Publishing Year – **November 2017**. **ISBN 978-984-34-3061-8**.

Publications

Refereed Journal:
- **Neloy, A. A.**, Alam, S., Bindu, R. A.,(2020, August). **Design and Implementation of a Novel Hybrid Rental Apartment Recommender System**. *Advances in Data Science and Adaptive Analysis*. DOI: **https://doi.org/10.1142/S2424922X2041003X**

- **Neloy, A. A.**, Bindu, R. A., Alam, S., Haque, R., Khan, M. S. A., Mishu, N. M., & Siddique, S. (2020, November). **Alpha_N-V2: Shortest Path Finder Automated Delivery Robot with Real-Time Object Detection and Avoiding System**. *Vietnam Journal of Computer Science (VJCS)*, Issue-7, No 4, Nov 2020.DOI: **https://doi.org/10.1142/S2196888820500219**

- **Neloy, A. A.**, Arman, A., Islam, M. S., & Motahar, T. (2018).**Automated Mobile Robot with RFID Scanner and Self Obstacle Avoiding System**. *International Journal of Pure and Applied Mathematics*, 118(18), 3139-3150. (**pdf**)

Book Chapter:
- **Neloy, A. A.**, Bindu, R. A., Alam, S., Haque, R., Khan, M. S. A., Mishu, N. M., & Siddique, S. (2020, March).**Alpha-N: Shortest Path Finder Automated Delivery Robot with Obstacle Detection and Avoiding System**. *In Asian Conference on Intelligent Information and Database Systems*, (pp. 202-213). Springer, Cham.DOI : https://doi.org/10.1007/978-3-030-41964-6_18

- **Neloy A.A.**, Shafayat Oshman M., Islam M.M., Hossain M.J., & Zahir Z.B. (2019).**Content-Based Health Recommender System for ICU Patient**. In: Chamchong R., Wong K. (eds) *Multi-disciplinary Trends in Artificial Intelligence*. MIWAI 2019. Lecture Notes in Computer Science, vol 11909. Springer, Cham. DOI : https://doi.org/10.1007/978-3-030-33709-4_20

Peer-Reviewed Conference Paper:
- Bindu, R. A., **Neloy, A. A.**, Alam, S., Moni, N. J., & Siddique, S. (2019, November).**Sigma-3: Integration and Analysis of a 6 DOF Robotic Arm Configuration in a Rescue Robot**. In *2019 4th International Conference on Robotics and Automation Engineering (ICRAE)* (pp. 6-11). IEEE. DOI : https://doi.org/10.1109/ICRAE48301.2019.9043799

- **Neloy, A. A.**, Alam, S., Bindu, R. A., & Moni, N. J. (2019, April).**Machine Learning based Health Prediction System using IBM Cloud as PaaS**. In *2019 3rd International Conference on Trends in Electronics and Informatics (ICOEI)* (pp. 444-450). IEEE. DOI : https://doi.org/10.1109/ICOEI.2019.8862754

- Bindu, R. A., Alam, S., & **Neloy, A. A**. (2019, March). **A Cost-Efficient Multipurpose Service Robot using Raspberry Pi and 6 DOF Robotic Arm**. In *Proceedings of the 2019 2nd International Conference on Service Robotics Technologies* (pp. 16-22). DOI : https://doi.org/10.1145/3325693.3325701

- **Neloy, A. A.**, Haque, H. S., & Ul Islam, M. M. (2019, February). **Ensemble Learning Based Rental Apartment Price Prediction Model by Categorical Features Factoring**. *In Proceedings of the 2019 11th International Conference on Machine Learning and Computing* (pp. 350-356). DOI : https://doi.org/10.1145/3318299.3318377

Preprint:
- Bindu, R. A., **Neloy, A. A.**, Alam, S., & Siddique, S. (2020). **3-Survivor: A Rough Terrain Negotiable Teleoperated Mobile Rescue Robot with Passive Control Mechanism**. *arXiv preprint arXiv:2003.05224*.

- **Neloy, A. A.**, Oshman, M. S., Islam, M. M., Hossain, M. J., & Zahir, Z. B. (2019). **Early Health Prediction System for ICU Patient using Machine Learning and Cloud Computing**. (No. 1590). EasyChair.

Personal	

Citizenship	Bangladeshi
Marital Status	Married
Love to	Walk/Run/Playing Games, read books, Cook for others (occasionally), Travel

References

Max Turgeon, Ph.D. (Current Academic Supervisor)
Assistant Professor
Department of Computer Science,
University of Manitoba.
email: max.turgeon@umanitoba.ca

Md. Shazzad Hosain, Ph.D. (Previous Academic Supervisor)
Professor
Department of Electrical & Computer Engineering,
North South University.
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