Asif Ahmed Neloy

Adjunct Faculty, Faculty of Land and Food Systems,
University of British Columbia (UBC), Vancouver

asif.neloy@ubc.ca || neloyn@myumanitoba.ca
https://github.com/aaneloy
https://linkedin.com/in/aaneloy
Website: https://aaneloy.github.io/

Professional Summary

Educator and researcher with over 5 years of experience teaching undergraduate and graduate courses at institutions including UBC, Douglas College, BCIT, VIU, and North South University. My teaching portfolio spans algorithms, databases, machine learning, and cloud systems, with a strong emphasis on project-based learning and reproducible lab design. I hold an MSc in Computer Science, with a focus on unsupervised anomaly detection using generative deep learning models. I bring a track record of curriculum leadership, cross-department collaboration, and mentoring students in both academic and applied research settings.

Education

2021 – 2023 **Master of Science in Computer Science (M.Sc CS)**, *Department of Computer Science, Faculty of Science, University of Manitoba*, Winnipeg, MB

- Supervisors:
  - Dr. Maxime Turgeon, Senior Data Scientist (Tesera Systems) and Adjunct Professor, Department of Statistics, University of Manitoba, Canada.
  - Dr. Cüneyt Akçora (Co-Supervisor), Assistant Professor, Department of Finance and Computer Science, University of Central Florida, USA.
  - Recipient of the Faculty of Graduate Studies Prestigious Research Completion Scholarship
- Dissertation: **Disentangled Conditional Variational Autoencoder for Unsupervised Anomaly Detection**

Work Experience

Dec 2024 – Present **Adjunct Faculty**, *Faculty of Land and Food Systems, University of British Columbia (UBC)*, Vancouver, BC

- Course taught: FRE 521D (Data Analytics in Climate, Food, and Environment) [course details].
- Curriculum development: authored outcomes-aligned syllabi, case-based assignments, and rubrics; built containerized labs with versioned datasets.
- Supervision and mentorship: guided graduate analytics projects from scoping to delivery, emphasizing reproducibility, model evaluation, and communication to non-technical stakeholders.

Dec 2023 – Dec 2025 **Instructor/Lecturer**, *Dept of Computing Studies and Information Systems, Douglas College*, New Westminster, BC

- Courses Taught:
  - CSIS 1175: Introduction to Programming I
  - CSIS 2200: Systems Analysis & Design
  - CSIS 2300: Database I
  - CSIS 3200: Applied Knowledge Management
  - CSIS 3290: Fundamentals of Machine Learning
  - CSIS 3300: Database II
  - CSIS 3360: Fundamentals of Data Analytics
  - CSIS 3860: Data Visualization
  - CSIS 4260: Special Topics in Data Analytics
- Program and curriculum service: contributed to course sequencing and degree requirements; aligned assessments to learning outcomes; coordinated dataset access and ethics for applied projects.
- Learning technology: standardized coding/project templates, CI checks, and lab runbooks to support consistent delivery across multiple sections and instructors.

Aug 2024 – Dec 2024 **Instructor/Lecturer**, *Dept of Computing & Academic Studies, British Columbia Institute of Technology (BCIT)*, Vancouver, BC

- Courses Taught:
  - COMP 2510: Procedural Programming
  - COMP 2522: Object-Oriented Programming I
  - COMP 3760: Algorithm Analysis and Design
- Student Supervision:
  - COMP 3800: Projects Practicum I
  - COMP 4800: Projects Practicum II

Aug 2023 – Dec 2023 **Instructor/Lecturer**, *Dept of Computer Science, Vancouver Island University*, Nanaimo, BC

- Courses Taught:
  - CSCI 112: Applications Programming
  - CSCI 159: Computer Science I
- Instructed lectures and laboratory sessions, facilitated discussions and served on curriculum committees.

Aug 2021 – Sep 2022 **Graduate Trainee**, *NSERC CREATE The Visual and Automated Disease Analytics (VADA) Program*

- Summer Internship:
  - Research Internship at Xing's Lab, University of Saskatchewan
  - Research Area: Predicting Hypertension based on the CDC dataset.

Jan 2019 – Jan 2021 **Data Scientist**, *Advanced Chemical Industries (ACI) Ltd.*, Dhaka, Bangladesh

- Projects:
  - Sales Forecast Service using ARIMA and gradient boosting for retail and pharma channels.
  - Operations Reporting Suite delivering governed views with audit trails and scheduled refreshes.
  - Stack: AWS, Python (pandas), SQL; orchestrated scheduled jobs and standardized model/data artifacts.
- Role and impact:
  - Standardized KPI layer and trained end users across business teams.
  - Improved forecast error by 12% and shortened month-end close by 1 day.
  - Reduced ad hoc report requests by 30% through self-serve dashboards and documented lineage.

Sep 2018 – Jan 2020 **Instructor**, *Department of Electrical and Computer Engineering, North South University*, Dhaka, Bangladesh

- Courses taught: CSE 373 Design and Analysis of Algorithms, CSE 325/CSE 425 Concepts of Programming Language, CSE 493 Special Topics, CSE 498/EEE 498/ETE 498 Internship/Co-op/Directed Research.
- Chair, student extracurricular activities: organized hackathons, technical seminars, and peer mentoring sessions to increase student engagement and project participation.
- Committee service: member of the selection committee for lab instructors and undergraduate student assistants, including screening, interviews, and onboarding coordination.

Research Grants

2024 – 2025 **Research Dissemination Publish Grant**

Awarded by the Research and Innovation Office, Douglas College

2024 – 2025 **Research Dissemination Present Grant**

Awarded by the Research and Innovation Office, Douglas College

2022 **Graduate Student Travel Grant**

Awarded by the Faculty of Graduate Study and Dept of Computer Science, University of Manitoba to attend ICDM 2022, Orlando, Florida, USA.

2022 **Trainee Travel Grant**

Awarded by NSERC Grant on VADA Program for participation in ICDM 2022, Orlando, Florida, USA.

2022 **Graduate Student Travel Grant**

Awarded by the Faculty of Graduate Study and Dept of Computer Science, University of Manitoba to attend the ICSA-Canada Chapter 2022 Symposium, Alberta, Canada.

Awards and Honors

2023 **Faculty of Graduate Studies Prestigious Research Completion Scholarship**

Awarded by the Faculty of Graduate Studies, University of Manitoba, for excellence in graduate studies and research.

2022 **1^{st} Runner-up Honorable Mention**

Received at the **Big Data Challenge**, VADA Program Summer School 2022.

2022 **Third Place**

Awarded in the **Poster Competition**, VADA Program Summer School 2022.

2022 **Computer Science Progression Award**

Awarded $540 for maintaining satisfactory and on-time progress in the graduate program at the University of Manitoba.

2021 – 2022 **Graduate Trainee Stipend**

Awarded $19000 as part of the Visual and Automated Disease Analytics (VADA) Program.

2021 **Fellowship**

Awarded $500 by the Department of Computer Science, University of Manitoba, for Summer 2021.

2021 **Fellowship**

Awarded $11500 for Winter, Summer, and Fall 2021 by the Faculty of Science, University of Manitoba.

2021 **General Bursary**

Awarded a $2400 deduction towards Winter 2021 tuition fees by the Faculty of Graduate Studies, University of Manitoba.

2018 **1st Runner-Up**

Achieved in the Undergraduate Thesis Capstone Project at the Capstone Innovation Challenge, Season 6.

2020 **25% Financial Aid**

Awarded towards tuition fees for Academic Performance at North South University.

Publications

Peer Reviewed

IEEE BigData'24 **Disentangled Conditional Variational Autoencoder for Unsupervised Anomaly Detection**

Asif Ahmed Neloy, Maxime Turgeon, 2024 IEEE International Conference on Big Data (BigData), Washington, DC, USA, 2024, pp. 138-143, doi: 10.1109/BigData62323.2024.10825554

MLWA Journal'24 **A Comprehensive Study of Auto-Encoders for Anomaly Detection: Efficiency and Trade-Offs**

Asif Ahmed Neloy, Maxime Turgeon, *Machine Learning with Applications*, Volume 17, 100572, 2024. DOI: 10.1016/j.mlwa.2024.100572

ICDM'22 **Feature Extraction and Prediction of Combined Text and Survey Data using Two-Staged Modeling**

Asif Ahmed Neloy, Maxime Turgeon, 2022 IEEE International Conference on Data Mining Workshops (ICDMW), Orlando, Florida, USA. DOI: 10.1109/ICDMW58026.2022.00064

UR'21 **3-Survivor: A Rough Terrain Negotiable Search and Surveillance Mobile Robot with Real-Time Object Detection**

Rafia Alif Bindu, **Asif Ahmed Neloy**, Sazid Alam, Shahnewaz Siddique, 2021 18th International Conference on Ubiquitous Robots (UR), Jeju, South Korea. DOI: 10.1109/UR52253.2021.9494682

VJCS Journal'20 **Alpha_N-V2: Shortest Path Finder Automated Delivery Robot with Real-Time Object Detection and Avoiding System**

Asif Ahmed Neloy, Rafia Alif Bindu, Sazid Alam, Ridwanul Haque, Md Saif Ahammod Khan, Nasim Mahmud Mishu, Shahnewaz Siddique, Vietnam Journal of Computer Science, 2020. DOI: 10.1142/S2196888820500219

ADSA Journal'20 **Design and Implementation of a Novel Hybrid Rental Apartment Recommender System**

Asif Ahmed Neloy, Rafia Alif Bindu, Sazid Alam, Advances in Data Science and Adaptive Analysis, August 2020. DOI: 10.1142/S2424922X2041003X

MIWAI'19 **Content-Based Health Recommender System for ICU Patient**

Asif Ahmed Neloy, Muhammad Shafayat Oshman, Md Monzurul Islam, Md Julhas Hossain, and Zunayeed Bin Zahir, Multi-disciplinary Trends in Artificial Intelligence, MIWAI 2019, Lecture Notes in Computer Science, vol 11909. Springer, Cham. DOI: 10.1007/978-3-030-33709-4_20

ICRAE'19 **Sigma-3: Integration and Analysis of a 6 DOF Robotic Arm Configuration in a Rescue Robot**

Rafia Alif Bindu, **Asif Ahmed Neloy**, Sazid Alam, Nusrat Jahan Moni, and Shahnewaz Siddique, 2019 4th International Conference on Robotics and Automation Engineering (ICRAE), November 2019. DOI: https://doi.org/10.1109/ICRAE48301.2019.9043799

ICOEI'19 **Machine Learning Based Health Prediction System using IBM Cloud as PaaS**

Asif Ahmed Neloy, Sazid Alam, Rafia Alif Bindu, and Nusrat Jahan Moni, 2019 3rd International Conference on Trends in Electronics and Informatics (ICOEI), April 2019. DOI: https://doi.org/10.1109/ICOEI.2019.8862754

IJPAM Journal'18 **Automated Mobile Robot with RFID Scanner and Self Obstacle Avoiding System**

Asif Ahmed Neloy, Aziz Arman, Mohammad Samiul Islam, and Tamanna Motahar, *International Journal of Pure and Applied Mathematics*, 118(18), 3139-3150, 2018. DOI: https://www.researchgate.net/publication/336837294

Published Books

2017 **"Let's make Robots"**

Published by Pinnacle Media, November 2017. [More details]

Invited Talks

2022 **ICSA-Canada Chapter 2022 Symposium**

Topic: Auto-encoders for Anomaly Detection: Efficiency and Trade-Offs.

Banff Center, Banff, Alberta, Canada. *[More details]*

2022 **Guest Lecturer at the University of Saskatchewan**

Delivered invited lectures on Introduction to Python and GitHub for the course STAT 447: Statistical Machine Learning for Data Science in the Department of Mathematics and Statistics.

2018 **Introduction to Machine Learning**

Lecture conducted at North South University, Dhaka, Bangladesh. *[Workshop Details]*

Professional Activities

External Reviewer

2020 2020 International Symposium on Automation, Information and Computing

ISAIC 2020, Beijing Jiaotong University, Beijing, China, December 2nd-4th, 2020.

2019 2019 The Fourth International Conference on Economic and Business Management

FEBM 2019, China, October 19-21, 2019.

2020 CAAI Transactions on Intelligence Technology

2020 IEEE Access

Mentorship

2021 Peer Mentor, for Graduate Student group at the Department of Computer Science, University of Manitoba.

Other Activities

2017-2019 Conducted Tutorial sessions and workshops including:

Workshop on Robotics (Robo101), Workshop on Intro to Machine Learning, and Hour of Code for the undergraduate students of North South University.

Software/Packages

2022 **Data Scaler Selector**: An open-source Python library to select the appropriate data scaler for Machine Learning models.

2021 **Image to Sketch**: A Python open-source library to convert color or black-and-white images to pencil sketches.

On-Progress **Data Preparer**: An open-source Python package to clean and prepare datasets before applying Machine Learning models.

References

Professional and Academic References available upon request.