

# Asif Ahmed Neloy

Faculty Member, Dept of Computing Studies and  
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Adjunct Faculty, Faculty of Land and Food Systems,  
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🔗 <https://github.com/aaneloy>

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Website: <https://aaneloy.github.io/>

## 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**, Data Scientist 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.
- 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)
- Engaged graduate students in hands-on projects and case studies to build practical expertise in data-driven decision-making.

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

- Courses Taught:
  - 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 4260: Special Topics in Data Analytics
- Served on faculty committees focusing on curriculum planning and degree requirements.

Aug 2024 – **Instructor/Lecturer**, *Dept of Computing & Academic Studies, British Columbia*  
Dec 2024 *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 – **Instructor/Lecturer**, *Dept of Computer Science, Vancouver Island University,*  
Dec 2023 *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 – **Graduate Trainee**, *NSERC CREATE The Visual and Automated Disease Analytics*  
Sep 2022 *(VADA) Program*

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

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## 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 ICSCA-Canada Chapter 2022 Symposium, Alberta, Canada.

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## 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<sup>st</sup> 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 **1<sup>st</sup> 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.

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## Publications

### Peer Reviewed

- IEEE BigData'24 **Disentangled Conditional Variational Autoencoder for Unsupervised Anomaly Detection**  
**Asif Ahmed Nelay**, 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 Nelay**, 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-Stage Modeling**  
**Asif Ahmed Nelay**, 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 Nelay**, 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 Nelay**, 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 Nelay**, 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 Nelay**, 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 Nelay**, 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]

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### 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]

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### 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.

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## 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.

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## References

**Professional and Academic References available upon request.**