

Fahim Anzum

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Biometric Technology Laboratory (BT Lab)
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Research Interest

Online Social Media Trustworthiness, Emotion Detection, Opinion Mining, NLP, Human – AI Interactions

Education

- Doctor of Philosophy: Computer Science** **Expected: Aug 2025**
 University of Calgary
Supervisor: Dr. Marina Gavrilova
Research Lab: Biometric Technologies Laboratory (BT Lab)
Ongoing Research: Towards Developing Trust-Aware Recommender Systems by Leveraging Users' Affective Traits and Trust Scores
- Master of Science: Computer Science** **Aug 2021**
 University of Calgary
Supervisor: Dr. Mario Costa Sousa, Dr. Usman Alim
M.Sc. Thesis: Exploring Convolutional Neural Networks and Transfer Learning for Oil Sands Drill Core Image Analysis (<https://prism.ucalgary.ca/handle/1880/113786>)
- Bachelor of Science: Computer Science and Engineering** **Jan 2018**
 Military Institute of Science and Technology, Bangladesh University of Professionals
B.Sc. Thesis: A New Algorithm to Compute Single Source Shortest Path in a Real Edge Weighted Graph to Optimize Time Complexity

Selected Publications (<https://scholar.google.com/citations?user=gziajGcAAAAI&hl=en>)

- F. Anzum and M. L. Gavrilova, "Emotion Detection from Micro-Blogs Using Novel Input Representation", in *IEEE Access*, vol. 11, pp. 19512-19522, 2023, doi: 10.1109/ACCESS.2023.3248506.
- Anzum, F., Asha, A.Z. and Gavrilova, M.L., 2022, September. "Biases, Fairness, and Implications of Using AI in Social Media Data Mining". In *2022 International Conference on Cyberworlds (CW)* (pp. 251-254). IEEE.
- K. De Chastelain Finnigan, F. Anzum, J. Rokne and M. L. Gavrilova, "Weighted Lexicon-based Sentiment Analysis for Women Career Traits in Information Technology", *2022 IEEE 21st International Conference on Cognitive Informatics & Cognitive Computing (ICCI*CC)*, Toronto, ON, Canada, 2022, pp. 91-98, doi: 10.1109/ICCI*CC57084.2022.10101520.
*** Best Paper Award**
- Gavrilova, M.L., Anzum, F., Hossain Bari, A.S.M., Bhatia, Y., Iffath, F., Ohi, Q., Shopon, M. and Wahid, Z., 2022. "A Multifaceted Role of Biometrics in Online Security, Privacy, and Trustworthy Decision Making". In *Breakthroughs in Digital Biometrics and Forensics* (pp. 303-324). Springer, Cham.
- Asha, A.Z., Anzum, F., Finn, P., Sharlin, E. and Costa Sousa, M., 2020, September. "Designing External Automotive Displays: VR Prototypes and Analysis". In *12th International Conference on Automotive User Interfaces and Interactive Vehicular Applications* (pp. 74-82).

Research Experience

- Graduate Assistant – Research, BT Lab, University of Calgary** **Calgary, AB, Canada**
Responsibilities: **Sept 2021 - Present**
 - Conducting extensive literature review, studying state-of-the-art research methodologies, and identifying research gaps
 - Ideating novel research questions
 - Implementing the proposed research approaches
 - Publishing the results as research papers in reputed venues
 - Mentoring undergraduate and graduate (MSc) level students in their research
 - Reviewing different conference and journal research papers

- **Research Intern, Suncor Energy Inc.**

Responsibilities:

- Closely collaborated with the geoscientists and engineers
- Developed and evaluated different machine learning and deep learning techniques to solve critical geoscience problems
- Cleaned, preprocessed, and analyzed Suncor Energy's proprietary drill core dataset

Calgary, AB, Canada
Sept 2019 – Sept 2021

Teaching Experience & Training

- **Graduate Assistant – Teaching, University of Calgary**

Conducted Courses:

- Data-604 (Working with Data at Scale)
- Data-201 (Thinking with Data)
- CPSC-217 (Introduction to Computer Science for Multidisciplinary Studies-I)
- CPSC-319 (Data Structures, Algorithms and Their Application)

Responsibilities:

- Teaching undergraduate level sessional classes
- Assisting students in programming and solving assignments
- Grading theoretical and coding assignments

Calgary, AB, Canada
Spring 2023, Fall 2022,
Fall 2021, Spring 2020,
Winter 2020

- **Lecturer, Computer Science and Engineering, United International University (UIU)**

Course Conducted: Computer Graphics, Data Structures, Algorithms

Responsibilities:

- Taught undergraduate-level courses, prepared quiz, and semester final question papers, conducted different exams, and evaluated the scripts
- Supervised students in undergraduate thesis
- Organized academic conferences and hosted different training programs

Dhaka, Bangladesh
Aug 2018 – Aug 2019
(Currently on Study-leave)

- **Lecturer, Computer Science and Engineering, Primeasia University**

Course Conducted: Software Engineering, Data Structures

Responsibilities:

- Taught undergraduate-level courses, prepared quiz, and semester final question papers, conducted different exams, and evaluated the scripts

Dhaka, Bangladesh
June 2018 – July 2018

- **Workshop on “Outcome Based Education” (OBE)**

United International University (UIU)

- Learned about the OBE to improve teaching skills

Dhaka, Bangladesh
Aug 2018

Other Academic Activities

- **Research Mentorship**

- Mentoring a master's and an undergraduate student at the University of Calgary to achieve research progress
- Advising the mentees to generate novel research ideas
- Assisting the mentees to write clean codes
- Providing guidance to write research papers

- **Vice President - Communication, Computer Science Graduate Society (CSGS), University of Calgary**

- Developing and executing effective communication strategies to enhance engagement within the CSGS
- Planning and organization of successful events, workshops, and seminars for graduate students, fostering collaboration and personal growth within the community

- **Volunteer, Academic Support Committee, Graduate Students Association (GSA), University of Calgary**

- facilitating graduate student academic development opportunities and professional advancement
- organizing academic workshops, seminars, and research symposium

- **Judge, Calgary Hacks 2022 – 20 February 2022**

- Served as a judge, evaluated different exciting projects, and provided insightful feedback

- **Conference and Journal Reviewer**

- The 21st International Conference on Computational Science and Applications (ICCSA 2021)
- Transactions on Computational Science – Springer

- **Participation:**

- 2022 ACM CHI in New Orleans, LA, USA
- Attended workshops, paper, and poster presentation sessions

- **Organizer, 21st International Conference on Computer and Information Technology (ICCIT - 2018)**

- *Managed sponsorship from different industries*
- *Served as one of the organizing committee members*

Awards & Scholarships

- **"2021 Alberta Innovates Graduate Student Scholarship"** (2021 - 2025) at the University of Calgary
 - *Valued at CA\$ 31,000/year*
- **"Eyes High International Doctoral Recruitment Scholarship"** (2021 - 2025) at the University of Calgary
 - *Valued at CA\$ 15,000/year*
- **"International Graduate Tuition Award"** (2021 - 2025) at the University of Calgary
 - *Valued at CA\$ 3,000/year*
- **"Department Research Award"** (2020 - 21) at the University of Calgary
 - *Valued at CA\$ 11,000 (Have been awarded for Winter 2021)*
- **"Mitacs-Accelerate Graduate Research Internship"** (2019 - 2021) at the University of Calgary
 - *Valued at CA\$ 50,000 for 2 years*
- **"International Graduate Recruitment Award"** (2019) at the University of Calgary
 - *Valued at CA\$ 2,000 received on September 2019*
- **"Visa Differential Scholarship"** (2019) at the University of Calgary
 - *Valued at CA\$ 4,126.17 for 1 year*
- **"MIST Commandant's List Award"** (2015, 2016) in MIST for academic distinction
- **"HSC Scholarship (2012)"** - stood **19th** in Dhaka Education Board, Bangladesh
- **"Junior School Scholarship (2008)"** on 8th grades, Dhaka, Bangladesh

Extra-Curricular Activities & Awards

- **Champion** in International Telco Warfare (Net War) - 2017 organized by East West University
 - *Solved computer networking problems using CISCO packet tracer*
- **Runner-up** in IUT CSE Fest (App Development) - 2017 among 41 teams
 - *Developed an Android healthcare application*
 - *Designed a user-interface and built a working prototype*
- **Second Runner-up** in SUST CSE Carnival (Hackathon) - 2017 among 36 teams
 - *Designed and developed a prototype of a tourism website using the basic HTML5, CSS, and JavaScript within a 24-hour timestamp*
- **Winner** in National Symposium on "Chemical Weapons Convention for the Peaceful Use of Chemistry" – 2017
 - *Participated in the poster competition*
- Project Showcasing in **IEEE IHTPC - 2017** organized by BUET
 - *Designed and presented a prototype of a self-position aligning robotic chair for a modern conference room using Arduino Uno microcontroller*

Skills (<https://github.com/anzumbivor>)

- **Programming Languages:** Python, Java, C, C++
- **Machine Learning and Deep Learning Frameworks and Libraries:** TensorFlow, Keras, Scikit-Learn
- **Data Analysis and Manipulation Libraries:** NumPy, Pandas
- **Data Visualization Libraries:** Matplotlib, Seaborn, Plotly
- **Soft Skills:** Communication, Problem Solving, Research, Collaboration, Leadership, Mentorship