Fahim Anzum

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Research Interest

Machine Learning and Deep Learning with a focus on real-world problems (*i.e., Online Social Networks, Biometric Technology, etc.*), Natural Language Processing, Human-Computer Interaction (HCI); Human-AI Interaction

Education

- **Doctor of Philosophy: Computer Science** **Expected: Aug 2025** Calgary, Canada
  University of Calgary
  Supervisor: Dr. Marina Gavrilova
  Research Lab: Biometric Technologies Laboratory (BT Lab)
  Ongoing Research: *Exploring the impact of combining stylometric features with linguistic features for detecting users' emotions from online social media text data*

- **Master of Science: Computer Science (CGPA: 4.00/4.00)** **Aug 2021** Calgary, Canada
  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*
  Open access: *https://prism.ucalgary.ca/handle/1880/113786*

- **Bachelor of Science: Computer Science and Engineering (CGPA: 3.79/4.00)** **Jan 2018** Dhaka, Bangladesh
  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*

Publications (https://scholar.google.com/citations?user=gziajGcAAAAJ&hl=en)

- **Anzum, F.**, Asha, A.Z., Gavrilova, M.L., 2022, September. **Biases, Fairness, and Implications of Using AI in Social Media Data Mining**. Accepted to be published in *2022 International Conference on Cyberworlds (CW)*.

- M. Gavrilova, **F. Anzum**, AWS H. Bari, Y. Bhatia, F. Iffath, Q. Ohi, Md. Shopon, Z. Wahid, **A Multi-Faceted Role of Biometrics in Online Security, Privacy and Trustworthy Decision Making**, *Chapter, in Breakthroughs in Digital Biometrics and Forensics, Kevin Daimi (Ed), Springer*, 2022 (in print)

- 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).

- Sharif, A., **Anzum, F.**, Zavin, A., Suha, S. A., Ibnat, A., & Islam, M. N. (2018, July). **Exploring the Opportunities and Challenges of Adopting Augmented Reality in Education in a Developing Country**. *In 2018 IEEE 18th International Conference on Advanced Learning Technologies (ICALT)* (pp. 364-366). IEEE.

- Ahmed, F., **Anzum, F.**, Islam, M. N., Abdullah, W. M., Al Ahsan, S., & Rana, M. (2018, June). **A New Algorithm to Compute Single Source Shortest Path in a Real Edge Weighted Graph to Optimize Time Complexity**. *In 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS)* (pp. 185-191). IEEE.

- **Anzum, F.**, Ahmed, F., Azim, M. S., Hossain, M., Zaman, S., Hasib, F., & Al Ahsan, S. (2018, June). **Smart Self Position Aligning Chair for a Modern Conference Room**. *In 2018 IEEE/ACIS 17th International Conference on Computer and Information Science (ICIS)* (pp. 263-268). IEEE.

- Zavin, A., **Anzum, F.**, Rahman, S. F., Islam, M. N., & Hoque, M. (2018, December). **Towards Developing an Intelligent Fire Exit Guidance System Using Informed Search Technique**. *In 2018 21st International Conference of Computer and Information Technology (ICCIT)* (pp. 1-6). IEEE.

Work Experience & Training

- **BT Lab, University of Calgary,** Graduate Assistant - Research   **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 scopes*
  - *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*
- **University of Calgary,** Graduate Assistant - Teaching   **Calgary, AB, Canada**
  Conducted Courses: Fall 2021, Spring 2020, Winter 2020
  - *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*
- **Suncor Energy Inc.,** Research Intern   **Calgary, AB, Canada**
  Responsibilities: Sept 2019 – Sept 2021
  - *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*
- **United International University (UIU),** Lecturer, Computer Science and Engineering   **Dhaka, Bangladesh**
  Course Conducted: Computer Graphics, Data Structures, Algorithms   Aug 2018 – Aug 2019
  Responsibilities: (Currently on Study-leave)
  - *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*
- **Primeasia University,** Lecturer, Computer Science and Engineering   **Dhaka, Bangladesh**
  Course Conducted: Software Engineering, Data Structures   June 2018 – July 2018
  Responsibilities:
  - *Taught undergraduate-level courses, prepared quiz, and semester final question papers, conducted different exams, and evaluated the scripts*
- **Workshop on "Outcome Based Education" (OBE)**   **Dhaka, Bangladesh**
  United International University (UIU)   Aug 2018
  - *Learned about the OBE to improve teaching skills*
- **Short Course on Cisco Certified Network Associate (CCNA)**   **Dhaka, Bangladesh**
  Military Institute of Science and Technology (MIST)   Duration: 42 Hours
  - *Learned the basic theory and applications of computer networking*
  - *Earned hands on experience with CISCO packet tracer*
- **Global Voice Telecom Limited**   **Dhaka, Bangladesh**
  - *Gained industrial training on VoIP technology*   Dec 2016 – Jan 2017

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*
- **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*
- **Membership:**
  - *Association for Computing Machinery (ACM)*
  - *Institute of Electrical and Electronics Engineers (IEEE)*
- **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

Online Courses and Certifications

- **Introduction to TensorFlow for Artificial Intelligence, Machine Learning, And Deep Learning**
  - Issuing Organization: Coursera
  - Issue Date: April 20, 2020
  - Credential ID: 6EK8CMWJWPGE
- **Python for Data Science and Machine Learning Bootcamp**
  - Issuing Organization: Udemy
  - Issue Date: April 17, 2020
  - Credential ID: UC-685f6e72-e398-462d-9cdf-666adbd78b9b

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

- **Knowledge:** Natural Language Processing, Machine Learning, Deep Learning, Computer Vision, Data Science
- **Technical Skills**: Python, C, C++, Java, TensorFlow, Keras, NumPy, Pandas, Matplotlib, Seaborn, Plotly, Scikit-Learn, HTML5, CSS, PHP, JavaScript, MySQL
- **Soft Skills:** Communication, Problem Solving, Research, Collaboration, Leadership, Mentorship

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*