Zaheen Farraz Ahmad

CONTACT INFORMATION	CSC 2-11 Department of Computing Science University of Alberta Edmonton, AB, T6G 2E8 *Email:* zfahmad@ualberta.ca

RESEARCH INTERESTS

My research interests mainly include areas in artificial intelligence with a focus on machine learning, search and optimization.

EDUCATION

University of Alberta, Edmonton, Alberta, Canada

Ph.D., Computing Science, Present
- Advisor: Michael Bowling

University of Alberta, Edmonton, Alberta, Canada

M.Sc., Computing Science, 2017
- Thesis Topic: "Action Selection for Hammer Shots in Curling: Optimization of Non-convex Continuous Actions With Stochastic Action Outcomes"
- Advisor: Robert C. Holte

Islamic University of Technology, Gazipur, Dhaka, Bangladesh

B.Sc., Computer Science and Engineering, 2012
- Thesis Topic: "Communication Requirement for Safety Applications in Low-Visibility for VANETs"
- Advisor: Md. Mahbub Alam

HONORS AND AWARDS

Graduate Student Teaching Award, 2018

Award for outstanding teaching performance as a Graduate student

IUT Gold Medal Award, 2012

Award for graduating with the highest GPA in the department at the Islamic University of Alberta (1 out of 50.)

SCHOLARSHIPS

IUT Scholarship, 2008

Scholarship for covering 3 years of academic tuition at the Islamic University of Technology.

ACADEMIC EXPERIENCE

University of Alberta, Edmonton, Alberta, Canada

Graduate Research Assistant   **May, 2014 - present**
- Current Ph.D. research and coursework
- Main member of the Computer Curling Research Group
- Devised an algorithm for non-convex optimization which outperforms Olympic-level humans in selecting hammer shots in curling
- Maintain the curling simulator software repository
- Supervised Undergraduate interns during their work in the summer semesters

Teaching Assistant   **Sep, 2013 - present**

- Instructed and graded labs per semester for the introductory Computing Science courses targeted toward both CS and non-CS students
- Conducted supplementary lectures that provided extra coverage of difficult concepts in the course curriculum
- Instructed main lectures of the course when the professor was unavailable

Islamic University of Technology, Gazipur, Dhaka, Bangladesh

Junior Lecturer   **Dec, 2012 - Jul, 2013**

- Helped design and instructed courses on Data Structures, Numerical Methods and Database Management Systems

PROFESSIONAL
EXPERIENCE

AB Sciex Pte. Ltd.

Data Science Consultant   **Dec, 2017 - Feb, 2018**

- Performed data analytics and machine learning evaluations
- Tested feasibility of automating microbacterial classification using artificial intelligence models

UNIVERSITY
SERVICES

University of Alberta

Vice-President, Computing Science Graduate Student Association   **2015**

Islamic University of Technology

Treasurer, IUT Computing Society   **2012**
Organizing Member, National ICT Fest   **2012**

OUTREACH

University of Alberta

Presenter, Iverson Day demos for high school students   **2014 - 2019**
Panelist, WP Wagner Panel on further education for high school students. **2015**

PUBLICATIONS

Refereed Journals

[1] Durksen, T.L., Chu, Man-Wai., Ahmad, Z.F., Radil, A.I., Daniels, L.M., "Motivation in a MOOC: a probabilistic analysis of online learners' basic psychological needs", *Social Psychology of Education*, pp.1-10. 2016

Refereed Conferences

[1] Ahmad, Z.F., Lelis, L.H.S., Bowling, M., "Marginal Utility for Planning in Continuous and Large Discrete Action Spaces", *Accepted at NeurIPS 2020*

[2] Ahmad, Z.F., Holte, R., Bowling, M., "Action Selection for Hammer Shots in Curling", *IJCAI 2016.*

Other Publications

[1] Ahmad, Z.F., "Action Selection for Hammer Shots in Curling: Optimization of Non-convex Continuous Actions With Stochastic Action Outcomes" *M.Sc. Thesis, Department of Computing Science, Islamic University of Alberta.* 2017

[2] Durksen, T.L., Chu, Man-Wai., Ahmad, Z.F., Radil, A.I., Daniels, L.M., "Probabilistic analysis of academic engagement: Exploring student motivation through a massive open online course" (Abstract only), *Australian Association for Research in Education and New Zealand Association for Research in Education.* 2014

[3] Ahmad, Z.F., Hossain, M.Md., "Communication Requirements for Safety Applications in Low Visibility for VANETs" *B.Sc. Thesis, Department of Computer Science and Engineering, Islamic University of Technology.* 2012

TECHNICAL SKILLS

- Languages: C, C++, Java, Python
- Computing Experience: Batch scheduling on parallel cores
- Algorithms: Experience programming numerical programs, Bandit applications, heuristic search applications
- Operating Systems: MacOS X, Unix/Linux, Windows.