Research Office
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Athabasca, AB T9S 3A3

NSERC Undergraduate Student Research Award

Position Start Date: Summer Term (May – August 2025)

Overview:

Dr. Ali Dewan (https://www.athabascau.ca/science-and-technology/our-people/ali-dewan.html) at School of Computing and Information Systems, Athabasca University, are looking for an eligible student who can work full-time for a full 16 weeks for the Summer Term (May – August 2025) to apply for NSERC USRA (Undergraduate Student Research Award).

NSERC USRA instructions and forms are available on the website:
http://www.nserc-crsng.gc.ca/Students-Etudiants/UG-PC/USRA-BRPC_eng.asp

NSERC USRA Eligibility:

1. be a Canadian citizen or permanent resident of Canada as of the deadline date for applications at the university.
2. be registered, as of the deadline date for applications at the university, in a bachelor's degree program at an eligible university.
3. have obtained, over the previous years of study, a cumulative average of at least second class (a grade of "B" or "B-," if applicable) as defined by your university.
4. may hold only one university USRA per fiscal year (April 1 to March 31).
5. may hold a maximum of three university USRAs throughout your undergraduate university career.
6. have completed all the course requirements of at least the first year of university study (or two academic terms) of your bachelor's degree.
7. have been registered in at least one of the two terms immediately before holding the award in a bachelor's degree program at an eligible university.
8. not have started a program of graduate studies in the natural sciences or engineering at any time.
9. be engaged on a full-time basis in research and development activities in the natural sciences or engineering during the tenure of the award.

Automated scoring of forum posts in online courses

The purpose of this research is to create a system that automatically scores students' course discussion posts, assessing their grasp of the course material. Manually evaluating large volumes of forum posts is time-consuming and can yield inconsistent results. Implementing automatic scoring could significantly reduce this inconsistency in post scoring and the workload for instructors. While tasks like automated essay scoring and short answer grading focus on writing quality or correctness, our proposed automated post scoring system aims at evaluating online course

discussion posts in terms of writing quality, relevance to the topics, and the students' level of cognitive engagement with the material. Our primary research question in this study is - *how effective the measures of post relevancy, writing quality, and cognitive engagement detections are in automating the scoring of course discussion posts?* To assess relevancy, we will analyze semantic consistency between posts and topics. We will use the Interactive, Constructive, Active, and Passive (ICAP) framework to detect the level of cognitive engagement of the student in forum posts. The quality of writing will be evaluated using a hierarchical text model. Our experiment will utilize Stanford's MOOC dataset in this study. This 16-week research project aims to design, implement, and deploy a system for automatic scoring of course forum posts.

How to apply:

Qualified individuals are encouraged to submit their application by email to Dr. Ali Dewan (adewan@athabascau.ca). Applications should include (as a single PDF file) a brief cover letter that summarizes your skills, interests and experience, and a current resume or curriculum vitae. Evaluation of applications will begin immediately and will continue until a suitable candidate is found.

Athabasca University and the researchers here are committed to equity in employment opportunities. We encourage applications from women, Indigenous Peoples, persons with disabilities, racialized minorities, 2SLGBTQI+ people, and anyone who identifies with a historically marginalized group. Applicants are welcome, but not required, to self-identify in their letter of application.