University of Alberta University of Alberta Calendar 2024-2025

Graduate Programs in Computing Science

Department of Computing Science
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General Information

The Computing Science Department offers programs leading to the degrees of Master of Science and Doctor of Philosophy in major areas of study, including Human-Computer Interaction, Algorithmics, Artificial Intelligence, Bioinformatics, Communication Networks, Computer Games, Computer Graphics, Computer Vision and Multimedia Communications, Database Systems, Machine Learning, Reinforcement Learning, Robotics, Software Engineering, Software Systems and Statistical Machine Learning.

The offered MSc programs are: a standard MSc in Computing Science, an MSc in Computing Science with specialization in Statistical Machine Learning and an MSc in Computing Science with specialization in Multimedia. The standard MSc in Computing Science is offered as a thesis-based program, as well as course-based program; the MSc in Computing Science with specialization in Statistical Machine Learning is offered as a thesis-based program; the MSc in Computing Science with specialization in Multimedia is offered as a course-based program.

The offered PhD programs are: a standard PhD in Computing Science and a program leading to a PhD in Computing Science with specialization in Statistical Machine Learning.

Further information may be obtained from the Graduate Program Administrator, Department of Computing Science.

Entrance Requirements

For all programs EXCEPT the MSc (course-based) with a specialization in Multimedia:

Applicants for the MSc degree in Computing Science should have a four-year undergraduate degree or the equivalent from a recognized university, with adequate background in computing science and mathematics.

There is no direct admission to the MSc with a specialization in Statistical Machine Learning. Applicants wishing to pursue this program should apply to the thesis-based MSc; they may apply to transfer to the SML program after one or two terms of study provided a supervisor is found.

Applicants for the PhD in Computing Science must have an MSc degree in Computing Science or a related field.

Exceptionally qualified applicants having the equivalent of a First-Class Honors BSc degree may be admitted directly to the PhD program.

MSc candidates who perform especially well in their first session (eight months) of studies, may apply to change program category into the PhD program after two terms of study.

All applicants must have an admission GPA of at least 3.0 on the 4-point scale from the University of Alberta, or an equivalent standing from a recognized institution. The admission GPA will be calculated on the last 60 units of graded coursework completed, or on the equivalent of the last two years of full-time graded coursework.

Where applicable, applicants must provide proof of English Language Proficiency (refer to English Language Requirement). Any one of the following is acceptable:

- a minimum TOEFL score of 100 with a minimum score of 21 on each of the individual skill areas (internet-based), or equivalent
- a minimum of 6.0 on each band on the IELTS with an overall minimum score of 7.0,
- a minimum overall score of 70 on the CAEL with at least 60 on each subtest
- a minimum overall score of 68 on the PTE.

In addition, the Department of Computing Science reserves the right to require a demonstration of English language proficiency.

Applicants must also submit three letters of reference and a CV.

Applicants to a thesis-based MSc are required to select a research area and name up to three professors as potential supervisors.

Applicants to a PhD are required to submit a statement of purpose, the abstract of their MSc thesis, and the names of up to three professors as potential supervisors. PhD students will only be admitted if a professor agrees to be their supervisor.

A Graduate Record Examination (GRE) is optional but highly recommended for non-Canadian applicants, as well as Canadian applicants with a degree from a non-Canadian university. The GRE is also recommended for students with backgrounds unrelated to Computing Science. The examinations should be written early enough so that scores will be available by the application deadline.

For the MSc (course-based) with a specialization in Multimedia:

Applicants for the MSc degree with a specialization in Multimedia should have a four-year undergraduate degree in Computing Science, Computer Engineering, or in a related field in Science or Engineering with some coding and implementation experience. Applicants must have an admission GPA of at least 3.0 on the 4-point scale from the University of Alberta, or an equivalent standing from a recognized institution. The admission GPA will be calculated on the last 60 units of graded coursework completed, or on the equivalent of the last two years of full-time graded coursework.

Where applicable, applicants must meet the minimum English Language Requirement.

Applicants are also required to submit a CV, multimedia-related professional certificates/diplomas, and a multimedia project history (if not included in the CV).

Industrial experience may be considered as a factor when considering admission of students close to these boundaries. It should be noted that these are minimum requirements only.

Applications to the MSc in Multimedia program will be assessed by the MSc in Multimedia admission.

Application Deadlines

For all programs EXCEPT the MSc (course-based) with a specialization in Multimedia, the early application deadline is December 15. Assessment of applications will begin on this date as well as consideration for funding and scholarships. Applications will continue to be accepted until January 15.

For the MSc (course-based) with a specialization in Multimedia the application deadline is March 1.

Canadian students who hold major scholarships may contact the Department at any time, even if it is after the deadline.

Financial Assistance

The department provides financial support for students in thesis-based programs according to the guidelines given in the Department of Computing Science Financial Support Policy. In order to be considered for assistance, students must maintain satisfactory academic and teaching performance.

Graduate Program Requirements

Master's Programs

- Master of Science (Computing Science)
- Master of Science in Computing Science with a Specialization in Statistical Machine Learning (Computing Science)
- Master of Science in Computing Science with a Specialization in Multimedia (Computing Science)

Doctoral Programs

- Doctor of Philosophy (Computing Science)
- Doctor of Philosophy in Computing Science with Specialization in Statistical Machine Learning (Computing Science)

Graduate Courses

Graduate courses can be found in Course Listings, under the subject heading Computing Science (CMPUT).

Multimedia courses can be found in Course Listings, under the subject heading Multimedia (MM).