

**3 SEMESTERS**  
840 hours

**AEC**  
**LEA.DR**

Montréal is the undisputed leader in artificial intelligence (AI) in Canada. This is a promising industry with many job opportunities. Leading figures in the technology community have played a part in developing this cutting-edge expertise within the city.

This program will enable students to further their education in computer science by specializing in problem-solving and data management in an artificial intelligence environment, particularly in machine learning. They will discover the key components of AI, including database storage and algorithms.

During their learning, the student will be able to:

- prepare and configure data to apply algorithms
- apply machine learning models and algorithm tools
- identify and select relevant research information
- extract results and solve problems

The program focuses on creating value in a company through tools that promote decision-making. Students will be asked to examine various contextual case studies. They will also gain strong problem-solving skills that will help them perform accurate forecasting and analysis.

Students will learn several key skills and tools that are essential to start a career in the artificial intelligence and machine learning industries. They can apply their knowledge to various fields, including financial technology, cybersecurity, aeronautics and retail.

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## Course goals

Upon completion of this program, students will have developed key skills that match the technical needs of the AI industries. This academic program will enable them to get entry-level positions in this dynamic environment, including roles such as data scientist or intelligent systems integrator.

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## Diploma

This program leads to an AEC diploma (Attestation of College Studies).

## Career Prospects

- Intelligent systems integrator
- Programmer specializing in machine learning
- Programmer-analyst in machine learning
- Programmer-analyst in learning systems
- Programmer in artificial intelligence
- Data scientist
- Specialist in artificial intelligence techniques
- Machine learning technician
- Artificial intelligence technician
- Learning system and megadata technician



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## Methods of Instruction

On-campus : At the Montréal campus

## Target clientele

The program is primarily intended for individuals who already have a post-secondary background in computer science and who wish to specialize in artificial intelligence.

## Program-specific courses

- Creativity, innovation and critical thinking (45h)
- Introduction to artificial intelligence (60h)
- Calculus (60h)
- Probability and statistics (45h)
- Algorithms (60h)
- Applied machine learning (75h)
- Advanced data management (75h)
- Machine learning and neural networks (60h)
- Research, ethics, profession and artificial intelligence (75h)
- Applied machine learning II (75h)
- Convolutional neural networks for visual recognition (90h)
- Recurrent neural network (75h)
- Industrial applications (45h)

\* The College reserves the right to substitute some courses.

## Technology used

Python, Numpy, Scikit-learn, Pandas, Matplotlib, Scipy, PyTorch, SQL.

## Bring Your Own Device

Students are required to use a laptop computer (learn more).

Your laptop must run on the Windows operating system to be able to use all the software. Standard or student license software must be installed when requested by teachers.

The following features are required for computers:

- Processor: Intel I5 or AMD A8 with VT-X virtualization support
- Memory: 8 GB minimum
- Hard drive: 500 GB minimum
- Screen: 14 inches minimum
- Connectivity: USB 3.0, WIFI and NIC LAN

You will need a USB-RJ45 adapter if the laptop does not contain a network port.

Mandatory software: Office suite

## Admission Criteria

Diploma of college studies (DEC) or equivalent in computer science.

