LaSalle College
Montréal

AEC in Artificial Intelligence and Machine Learning

5 SESSIONS
1800 hours

AEC
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Montréal has become a global hub for artificial intelligence (AI) research and innovation, according to Montréal International. The city has developed cutting-edge expertise, and several global leaders, including Mila, Google and Facebook, have research labs in the Montréal AI ecosystem.

During this program, students will develop key skills that match the technical needs of the AI industries. In particular, they will learn to:

- transfer the mathematical concepts necessary to create models and solutions that apply to the IT field
- prepare and explore data, define the problem and choose the appropriate algorithm
- integrate different interdisciplinary elements to generate results supporting decisions that deliver value to the business

At the end of their studies, students will have:

- designed and developed logical and relevant solutions
- gained a good understanding of how machine learning works
- presented their results and conclusions under various forms of application

Upon graduation, they will have all the tools they need to get a job in the field of artificial intelligence. They will be able to apply their knowledge to a variety of sectors, including FinTech, video games and cybersecurity.

Methods of Instruction

On-campus : At the Montréal campus

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

Course goals

By the end of this program, the student will be able to develop the basic skills that correspond to the technical needs of AI. The training will allow them to take entry-level positions in this high-tech industry, including roles such as data scientist.

Diploma

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

Technology used

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

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Program-specific courses

- Creativity, innovation and critical thinking (45h)
- Linear algebra (45h)
- Introduction to programming (75h)
- Introduction to relational databases (45h)
- Information systems (45h)
- Introduction to artificial intelligence (60h)
- Differential calculus (60h)
- Probability and statistics (45h)
- Object-oriented programming (90h)
- Introduction to data structures (75h)
- Database management systems (60h)
- Information security (45h)
- Design models (75h)
- Applied machine learning I (75h)
- Advanced data management (75h)
- Machine learning and neural networks (60h)
- Algorithms and data structures (60h)
- Applied machine learning II (75h)
- Convolutional neural networks for visual recognition (90h)

* The College reserves the right to substitute some courses.

Target clientele

The program targets individuals:

- with strong mathematical skills
- who have already taken post-secondary studies or who have worked in the job market without having developed IT skills
- who are interested in computer science, technology and artificial intelligence

The length of the program and the number of skills developed will ensure that students are well prepared to meet the needs of the artificial intelligence industry.

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

Have a high school diploma (DES) or equivalent or considered to have a sufficient level of education and meet the College Education Regulations, as well as have completed Mathematics TS, Secondary IV SN or Secondary V CST.

Applicants are eligible for a study program leading to an attestation of college studies (AEC) if they have a level of education that is deemed sufficient by the college and they meet one of the following criteria:

- They interrupted their full-time studies or pursued full-time post-secondary studies for at least two (2) consecutive semesters or one (1) school year.
- They are covered by an agreement between the college and an employer or they are benefiting from a government program.
- They interrupted their full-time studies for one semester and pursued full-time post-secondary studies for one semester.
- They have earned a diploma of vocational studies.

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