ARTIFICIAL INTELLIGENCE - ARCHITECTURE, DESIGN, AND IMPLEMENTATION

Program: AIDI
Credential: Ontario College Graduate Certificate
Delivery: Full-time + Part-time
Length: 2 Semesters
Duration: 1 Year
Effective: Winter 2021, Summer 2021
Location: Barrie

Description

The Artificial Intelligence (AI) computing paradigm radically changes the functionality and capabilities of computer systems. This greatly increases the possibilities of what businesses can do with this exciting new technology and is causing disruption across all industry sectors. Artificial Intelligence systems can think, learn and take self-directed action in order to maximize the chance of successfully achieving a goal without having to be explicitly programmed or human intervention.

This program provides students with the necessary background to become Artificial Intelligence (AI) system designers, programmers, implementers, or machine learning analysts. With a strong focus on applied skills, students learn how to design and implement supervised, unsupervised and reinforcement learning solutions for a variety of situations and solve AI challenges for a diverse set of industries.

Advanced study in AI infrastructure, architecture, machine learning frameworks, reinforcement learning, neural networks, vision system, conversational AI and deep learning help students understand how to select, configure and apply the right technology tools to build the correct AI solution to solve a given challenge.

Career Opportunities

Graduates from this program are prepared to fulfill a wide-range of entry-level roles related to Artificial Intelligence which may include Artificial Intelligence (AI) system designers, programmers, implementers, or machine learning technologists. Graduates could find themselves working independently or as a member of a team to analyze, design, enhance, and maintain AI systems.

Program Learning Outcomes

The graduate has reliably demonstrated the ability to:

1. collect, manipulate and mine data sets to meet organizational need;
2. recommend different systems architectures and data storage technologies to support data analytics;
3. design and apply data models that meet the needs of a specific operational/business process;
4. develop software applications to manipulate data sets, correlate information and produce reports;
5. design and present data visualizations to communicate information to business stakeholders;
6. apply data analytics, business intelligence tools and research to support evidence-based decision making;
7. identify and assess data analytics business strategies and workflows to respond to new opportunities or provide project solutions;
8. implement artificial intelligence (AI) solutions in compliance with corporate policies, ethical standards, and industry regulations;
9. develop artificial intelligence (AI) models and agents that use enterprise data to identify patterns, provide insights, recommend actions or perform tasks autonomously on behalf of stakeholders;
10. analyze, design, and implement artificial intelligence (AI) systems through the application of systematic approaches and methodologies to meet organizational needs.

Program Progression

The following reflects the planned progression for full-time offerings of the program.

Winter Intake - Barrie

- **Sem 1:** Winter 2021
- **Sem 2:** Summer 2021

Summer Intake - Barrie

- **Sem 1**: Summer 2021
- **Sem 2**: Fall 2021

Admission Requirements

Ontario College Diploma, Ontario College Advanced Diploma, degree or equivalent with a focus in computer studies, technology, engineering, analytics, mathematics or statistics, or equivalent work experience, is required.

Selection Process

Applicants may be asked to submit a current resume and a letter of interest to the Program Coordinator in order to assess their prior academic and experiential learning.

Additional Information

To be successful in this program, students are required to have a Windows-based personal notebook computer prior to the start of the program that meets or exceeds the following hardware specifications:

- Intel I7, AMD A10 processor or better
- 16 GB of RAM
- 1 TB hard drive
- Ethernet Network Card (Can be USB)
- Wireless Network Card
- 2 USB 3.0 ports

Graduation Requirements

14 Program Courses

Graduation Eligibility

To graduate from this program, a student must attain a minimum of 60% or a letter grade of P (Pass) or S (Satisfactory) in each course in each

semester. The passing weighted average for promotion through each semester and to graduate is 60%.

Program Tracking

The following reflects the planned course sequence for full-time offerings of the Winter intake of the program. Where more than one intake is offered contact the program co-ordinator for the program tracking.

Semester 1		Hours
Program Courses		
AIDI 1000	Artificial Intelligence Algorithms and Mathematics	56
AIDI 1001	Conversational Artificial Intelligence	42
AIDI 1002	Machine Learning Programming	42
AIDI 1003	Machine Learning Frameworks	42
AIDI 1004	Issues and Challenges in Artificial Intelligence	42
AIDI 1005	Artificial Intelligence for Business Decision Making	42
BDAT 1000	Data Manipulation Techniques	42
	Hours	308
Semester 2		
Program Courses		
AIDI 1006	Artificial Intelligence Infrastructure and Architecture	42
AIDI 1007	Vision Systems	42
AIDI 1008	Reinforcement Learning Programming	42
AIDI 1009	Neural Networks	42
AIDI 1010	Emerging Artificial Intelligence Technologies	42
AIDI 1011	Artificial Intelligence Project	56
AIDI 1012 Artificial Intelligence Robotics and Automation		42
	Hours	308
	Total Hours	616

Graduation Window

Students unable to adhere to the program duration of one year (as stated above) may take a maximum of two years to complete their credential. After this time, students must be re-admitted into the program, and follow the curriculum in place at the time of re-admission.

Disclaimer: *The information in this document is correct at the time of publication. Academic content of programs and courses is revised on an ongoing basis to ensure relevance to changing educational objectives and employment market needs.*

Program outlines may be subject to change in response to emerging situations, in order to facilitate student achievement of the learning outcomes required for graduation. Components such as courses, progression, coop work terms, placements, internships and other requirements may be delivered differently than published.