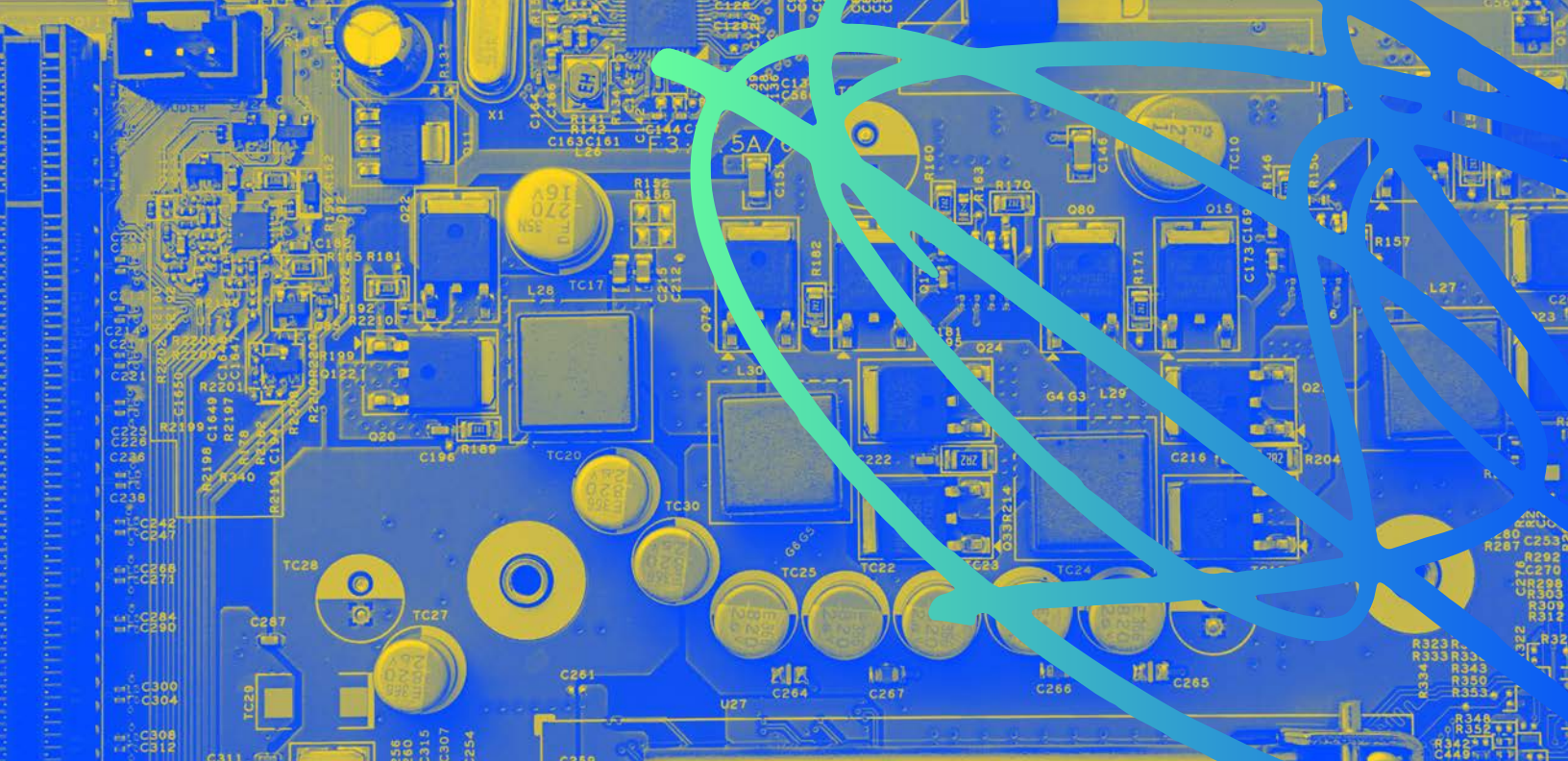




Learn AI Before AI Learns You



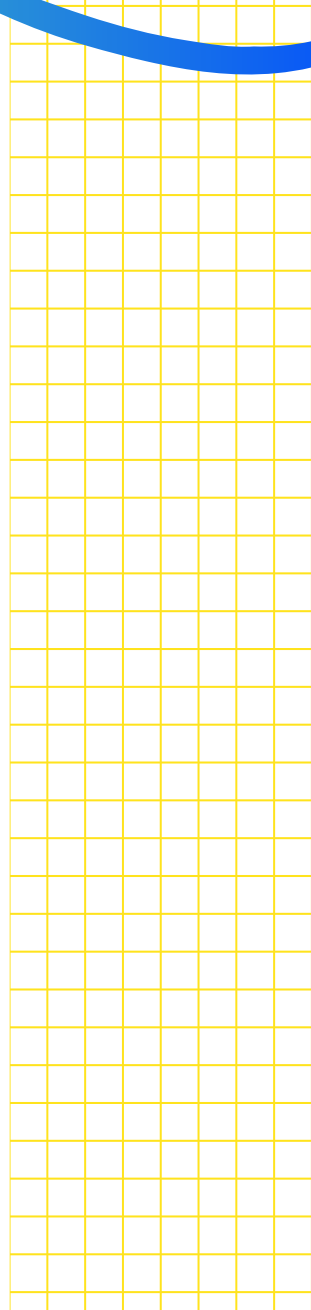
Data is the new currency across many sectors. More and more businesses are adopting artificial intelligence (AI) to unlock the incredible value of insights from data.



→ ***Engineering at Alberta is extending our world-class education experience to working professionals. We have put our teaching expertise and leading-edge equipment behind a three-module program, the Certificate in Artificial Intelligence Engineering.***

This certificate offers the opportunity for working professionals in a variety of industries to gain hands-on experience in the practical applications of AI. Using Python and available hardware, participants will learn to develop models and data-driven systems using Machine Learning and Deep Learning algorithms, as well as Reinforcement Learning techniques, all to be implemented and tested using Engineering at Alberta's advanced computational processing equipment. Participants have access to the resources in the newly opened AI Hub, used by small businesses to translate large data sets into actionable and valuable information.

When you've completed this certificate, you'll recognize ways to improve or even transform current technology or industrial processes. You'll work with teams, sometimes leading, to complete learning activities that are practical and transferable to your current work.



Learn While You Work

The certificate can be easily completed with limited time away from work. Each of the six-week modules is offered virtually. The synchronous virtual classes will be held on Friday afternoons and on Saturdays via Zoom. Expect to spend an additional 5 hours per week on assignments and reading.

Gain APEGA continuing professional development credit

This program qualifies for 108 continuing professional development hours in the 'formal activity' category of APEGA's professional development requirement.

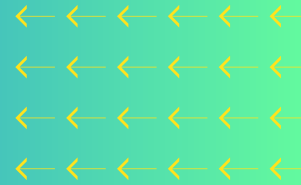
Engineering at Alberta

We are one of the top five engineering schools in Canada, with more than 4,000 undergraduate students and 1,000 graduate students annually. And now we are developing new programs for the working professional.

This is a place that uncovers the unknown. Where ideas take the stage and possibility runs the show. We train people to embrace curiosity, providing state-of-the-art facilities, award-winning faculty and support.

Summary of Certificate Program

The certificate is awarded upon successful completion of three 6-week courses.
Course assessment is through individual and group project work.



AIE 1

Machine Learning Applications

This module offers an introduction to a variety of unsupervised and supervised methods of data processing. You will learn different architecture configurations for predictive modeling, kernel methods, neural networks, and techniques for evaluation of model performance. You will bring real-world problems from your own workplace and use machine learning to solve them. With access to state-of-the-art resources and leading researchers in the area, your learning will be hands-on and practical with application to industry.

AIE 2

Applications with Deep and Graphical Networks

Dive into Deep Learning methodology and begin to build neural networks. This module will allow you to learn subjects such as convolutional neural networks and their applications to images, and recurrent network models for processing natural language and speech. It will introduce you to networks representing probability distributions, in particular Bayesian and Markov networks and their applications.

***Prerequisite AIE 1**

AIE 3

Reinforcement Learning Applications

An introduction to the principles of reinforcement learning that includes algorithms supporting action-decision processes that optimize long-term performance. You will learn such topics and concepts as: Markov Decision Process; dynamic programming; Monte-Carlo techniques; learning algorithms with on- and off-policy as well as Temporal Difference control; function approximation; deep Q-learning; and policy gradient methods.

***Prerequisite AIE 2**

Tuition

Regular: \$5,850

Register before September 9, 2020

Early Bird: \$5,250

Register before August 28, 2020

Classes start September 25, 2020

Fridays from 3-5 p.m. | Saturdays from 9-11 a.m. & 12 noon-2 p.m.

Machine Learning Applications (September 25 - November 21, 2020)

Applications with Deep and Graphical Networks (January 8 - March 6, 2021)

Applications in Reinforcement Learning (April 16 - June 12, 2021)

Learn more at uab.ca/engai



Instructional Development by: Dr. Marek Reformat

Dr. Reformat has been with the Department of Electrical and Computer Engineering at Engineering at Alberta since 2000. He is professor and a former Associate Chair of Graduate Studies in the department. Dr. Reformat is an associate editor of a number of journals related to Computational Intelligence and Software Engineering.

His initial research activities involved topics related to evolutionary computing and its application to optimizing problems. He proposed a new methodology for the design of control systems, which relied on a combination of advanced system simulators and genetic computation.

His current research focuses on development of methods and techniques for intelligent data modeling and analysis leading to translation of data into knowledge. He uses the concepts of Computational Intelligence as key elements necessary for capturing relationships between pieces of data and knowledge, and for introducing human aspects to data analysis and decision-making processes resulting in more human-aware and human-like systems.

He is a member of Institute of Electrical and Electronic Engineers (IEEE), Association for Computing Machinery (ACM) and Association for the Advancement of Artificial Intelligence (AAAI).