AIDI 1009: NEURAL NETWORKS

Course outlines are reviewed annually as part of continual quality improvement. This course was last updated for the effective term below.

Effective Term
Summer 2021

Full Course Title
Neural Networks

Academic Level
Post Graduate

Subject Code
AIDI - PG Artifical Intelligence

Course Number
1009

Grade Mode
Numeric

PLAR Applicable
Yes

Total Hours
42

Course Description
Neural networks are computational models that utilize a series of algorithms or nodes which mimic the way the human brain functions. These nodes work together to process and identify relationships between complex data. Neural networks can self-learn or be trained by observing data sets. Students will learn how to prepare data, select and design a neural network, then test and make predictions using the network.

Course Content
- Unsupervised Learning Principles
- Deep Learning Principles
- Neural Network Components
- Types of neural networks
- MLP (Multilayer Perceptions)
- CNN (Convolution Neural Network)
- RNN (Recurrent Neural Network)
- LSTM (Long Short Term Memory)
- Restricted Boltzmann Machine (RBM)

Course Evaluation

The passing grade for this course is 60%, evaluation is comprised of:
- Assignments 60%
- Test(s) 40%

Tests/examinations/assignments must be written/submitted at the time specified. Requests for adjustments to that schedule must be made before the test/exam/assignment date to the faculty member. Failure to do so will result in a mark of "0", unless an illness/ emergency can be proven with appropriate documentation at no cost to the College.

Academic Appeal
Students at Georgian College can appeal the following:
· A mark on an assignment, test, examination or work-integrated learning term
· Missing or incorrect assessment information on a grade report and/or transcript
· A charge of academic misconduct

Note: Students cannot appeal a final grade. It is the academic work that is appealable leading to the final grade i.e. final test, exam or assignment.
Refer to Academic Regulations 9.2 Academic Appeal for further details.

To graduate from graduate certificate level programs, 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%.

Course Learning Outcomes

Upon successful completion of this course, the student has reliably demonstrated the ability to:

1. evaluate the different types of neural networks;

Evaluation

Introduced
Assessed

Upon successful completion of this course, the student has reliably demonstrated the ability to:

2. prepare a data set to load into a neural network;

Evaluation

Introduced
Assessed

Upon successful completion of this course, the student has reliably demonstrated the ability to:

3. create a neural network model to solve a computational problem;

Evaluation

Introduced
Assessed

Upon successful completion of this course, the student has reliably demonstrated the ability to:

4. design an unsupervised learning model using a neural network;

Evaluation

Introduced
Assessed

Upon successful completion of this course, the student has reliably demonstrated the ability to:

5. train a neural network on a data model.

Evaluation

Introduced
Assessed

Key: 30164