Machine Learning

Learning Objectives:

- Define machine learning.
- Explain supervised, unsupervised, and reinforcement learning.
- Describe feature space engineering in the context of machine learning.
- Explain the process of preprocessing data for machine learning.
- Perform data preparation activities, including identifying and handling missing data, outliers, and erroneous data and partitioning data.
- Determine when to use particular supervised, unsupervised, and reinforcement learning methods.
- Analyze data using supervised methods, unsupervised methods, and reinforcement learning.
- Evaluate machine learning model performance.
- Generate reports of machine learning findings.
- Describe the machine learning model lifecycle.

Note: Read chapters 1-26 in *Artificial Intelligence: A Modern Approach* before beginning this lesson.

Think ahead to your capstone project: the machine learning proposal you create in Task 3 might support or contribute to a successful capstone. For inspiration and a better idea of what your capstone will entail, review examples in the Capstone Archives.

Assessment Connection: When selecting a problem to focus on in Task 3, consider data sets that will be available for your consideration. Search the Web for free data sets or refer to a data set used by your organization.

Machine learning is a diverse, rapidly evolving topic within the artificial intelligence field. Before proposing your own machine learning project, it is often helpful to research the latest information and experiences with similar efforts. Machine Learning: Searching the Library is a resource provided by the WGU Library to help you locate the most relevant and timely resources within the library.

Assessment Connection: Task 3 requires a written proposal. Refer back to the learning resources from C768: Technical Communication for tips on writing proposals.