



## The Week Ahead

In this module, we'll explore and implement neural networks using the TensorFlow platform in Python. We'll discuss the background and history of computational neurons as well as current implementations of neural networks as they apply to deep learning. We'll discuss the major costs and benefits of different neural networks and compare these costs to traditional machine learning classification and regression models. Additionally, we'll practice implementing neural networks and deep neural networks across a number of different datasets, including image, natural language, and numerical datasets. Finally, we'll learn how to store and retrieve trained models for more robust uses.

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## What You Will Learn

By the end of this module, you will be able to:

- Compare the differences between the traditional machine learning

classification and regression models and the neural network models.

- Describe the perceptron model and its components.
- Implement neural network models using TensorFlow.
- Explain how different neural network structures change algorithm performance.
- Preprocess and construct datasets for neural network models.
- Compare the differences between neural network models and deep neural networks.
- Implement deep neural network models using TensorFlow.
- Save trained TensorFlow models for later use.

## Unit: Advanced Topics

**Module 18:  
Unsupervised  
Machine Learning  
and Cryptocurrencies**  
Complete



## **Module 19: Neural Network and Deep Learning Models**

Create a deep-learning neural network to analyze and classify the success of charitable donations.



**Module 20:  
Final Project**

## Planning Your Schedule

Here's a quick look at the lessons and assignments you'll cover in this module. You can use the time estimates to help pace your learning and plan your schedule.

- Introduction to Module 19 (15 minutes)
- Introduction to Neural Networks (30 minutes)
- Build Your First Neural Network (2 hours)
- Prepare Your Neural Network Datasets (2 hours)
- Dig Deeper Into Neural Networks (2 hours)
- Select the Best Model for Your Dataset (2 hours)
- Export and Import Trained Models (1 hour)
- Application (5 hours)

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