**Artificial Intelligence and Deep Learning**

**Course Description:**

This comprehensive course will primarily focus on working with unstructured data (e.g., audio, video, images, text) and the technologies that provide for Artificial Intelligence. A large focus will be on understanding Convolutional Neural Networks (e.g., image processing) and Recurrent Neural Networks (e.g., language processing) – the foundation of deep learning. We’ll discuss the relationship between deep learning and A.I., and why deep learning is so effective in providing for artificial human intelligence applications.

The course begins by providing you with a solid understanding of neural networks and how they learn. We’ll discuss back propagation and some of the math behind neural networks. We’ll code a neural network from scratch, for a fuller understanding. With this background, we’ll then explore the architectural differences between deep neural networks and deep learning.

You’ll get hands-on experience using TensorFlow and Keras to build Convolutional Neural Networks for computer vision, and do an image recognition project. Next, we’ll turn to building sequence models and Recurrent Neural Networks to implement a project on natural language processing. Finally, each participant will apply these skills to an area of interest, and provide intelligence to a selected problem (e.g., music recommendations, face recognition, sentiment analysis).