**Google Cloud Platform (GCP) for AI**

**Title: Google Cloud Platform (GCP) for AI**

**Duration:** 1 day

**Pre-requisite:**

**Short Description:**

Google Cloud Platform (GCP) is a suite of cloud computing services offered by Google. This class will focus on using GCP to do Machine Learning and AI. You will first be provided with an overview of Machine Learning and AI. We will then explore the advantages of using a cloud service to do ML and AI. We will also discuss the opportunities to do automated ML using GCP, requiring little or no coding.

**Long Description:**

Google Cloud Platform (GCP) is a suite of cloud computing services offered by Google. This class will focus on using GCP to do Machine Learning and AI. You will first be provided with an overview of Machine Learning and AI. We will then explore the advantages of using a cloud service to do ML and AI. We will also discuss the opportunities to do automated ML using GCP, requiring little or no coding.

We will discuss using GCP to visually explore, clean and prepare your data for analysis. We will then look at the various building blocks that GCP offers to do creative ML and AI. We will demonstrate using GCP for vision tasks such as image and video analysis. We’ll also explore Natural Language Processing, Speech-to-Text, Text-to-Speech, and Language Translation using GCP.

**Learning Objectives:**

After this course, you will be able to:

* Have a basic understanding of TensorFlow
* Understand the similarities and differences between Machine Learning and AI
* Understand how to use GCP to visually explore, clean and prepare data
* Understand how to use GCP for vision tasks (e.g., analyze photos and video)
* Understand how to use GCP for Natural Language Processing and sentiment analysis
* Understand how to use GCP for Text-to-Speech and Speech-to-Text conversion
* Understand how to use GCP to Translate between thousands of available language pairs
* Understand how to use GCP to develop custom models using your own data
* Understand how to use GCP to do Automated ML where you can apply ML and AI using pre-trained models on common use cases with little or no coding

**Topic Outline:**

* Course Introduction
* Overview of Machine Learning and Artificial Intelligence
* Milestone 1: Learn how to access GCP
* Introduction to TensorFlow
* Explore, analyze and clean data using GCP
* Milestone 2: Explore Datalab and Dataprep for data analysis and preparation
* Vision Intelligence
  + Image Analysis
  + Video Analysis
* Text Intelligence
  + Natural Language Processing
  + Speech-to-Text, Text-to-Speech
  + Language Translation
* Creating custom vs. pre-trained models
* Milestone 3: Do photo analysis and text sentiment analysis
* Next steps

**Structured Activity/Exercises/Case Studies:**

* Milestone Project 1: Learn how to access GCP
* Milestone Project 2: Explore Datalab and Dataprep for data preparation
* Milestone Project 3: Use GCP to do photo analysis and text sentiment analysis **Training material provided:** Yes (Digital format)