Intelligent Contracts Workshop Guide

AI Ladder & ModelOps

IBM Cloud Pak For Data provides a stack of capabilities broken down into these 4 areas known as the AI Ladder.
ModelOps is an end to end process for developing and deploying data science assets to production that are monitored for bias.

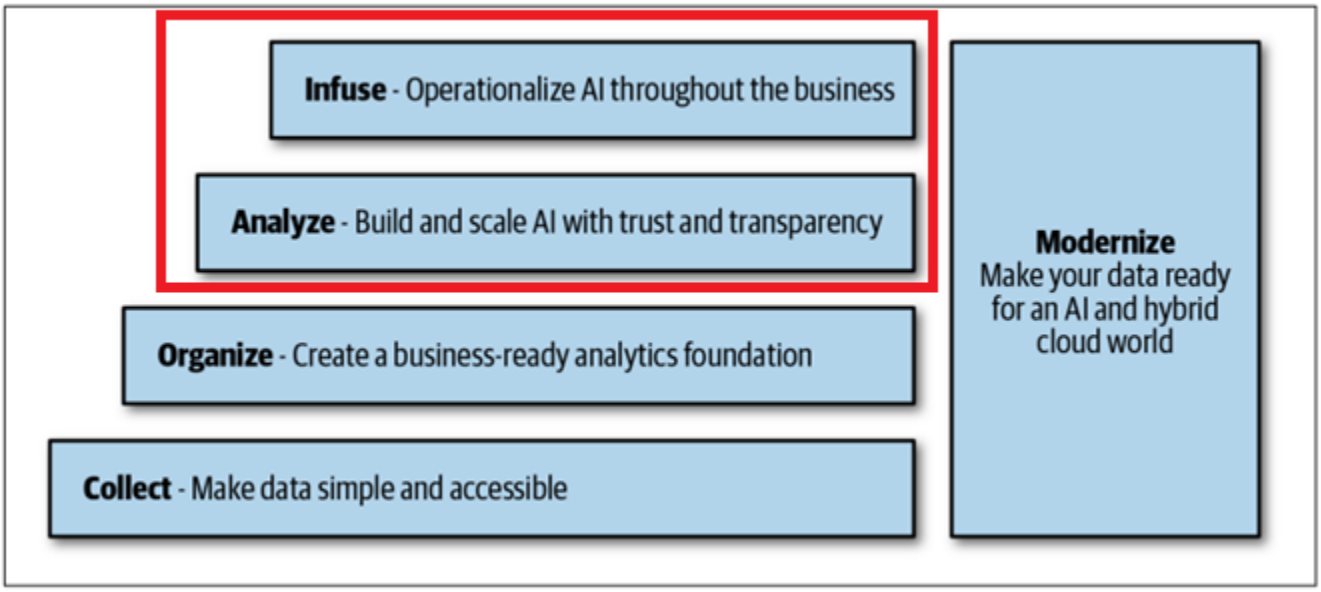

Figure 1 AI Ladder - Collect, Organize, Analyze, and Infuse AI into downstream applications.

Intelligent Contracts Workshop Scenario

In this workshop, we'll learn how to **infuse** an AI deployed model in an automated business workflow to gain prescriptive suggestions improving the likelihood of contract success.
We'll be using IBM Watson Studio, to **analyze**, build, test and deploy the machine learning models built on structured and unstructured data used to score contracts and make prescriptive suggestions.
Using Watson Discovery, we'll see how we extracted and merged unstructured textual concepts coming from many contracts with structural contract data to improve the accuracy of our AI model.

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Using Watson Discovery With Watson Studio To Build a Contract Success AI Model

In our previous demo with Watson Discovery, we learned how it was able to provide Domain Concepts like "Intellectual Property" from many contractual documents.
When building our machine learning model to predict contact success, we're going to merge the

unstructured concepts like “Intellectual Property” with the historical contract history to build and deploy a more robust machine learning model to predict contract success.

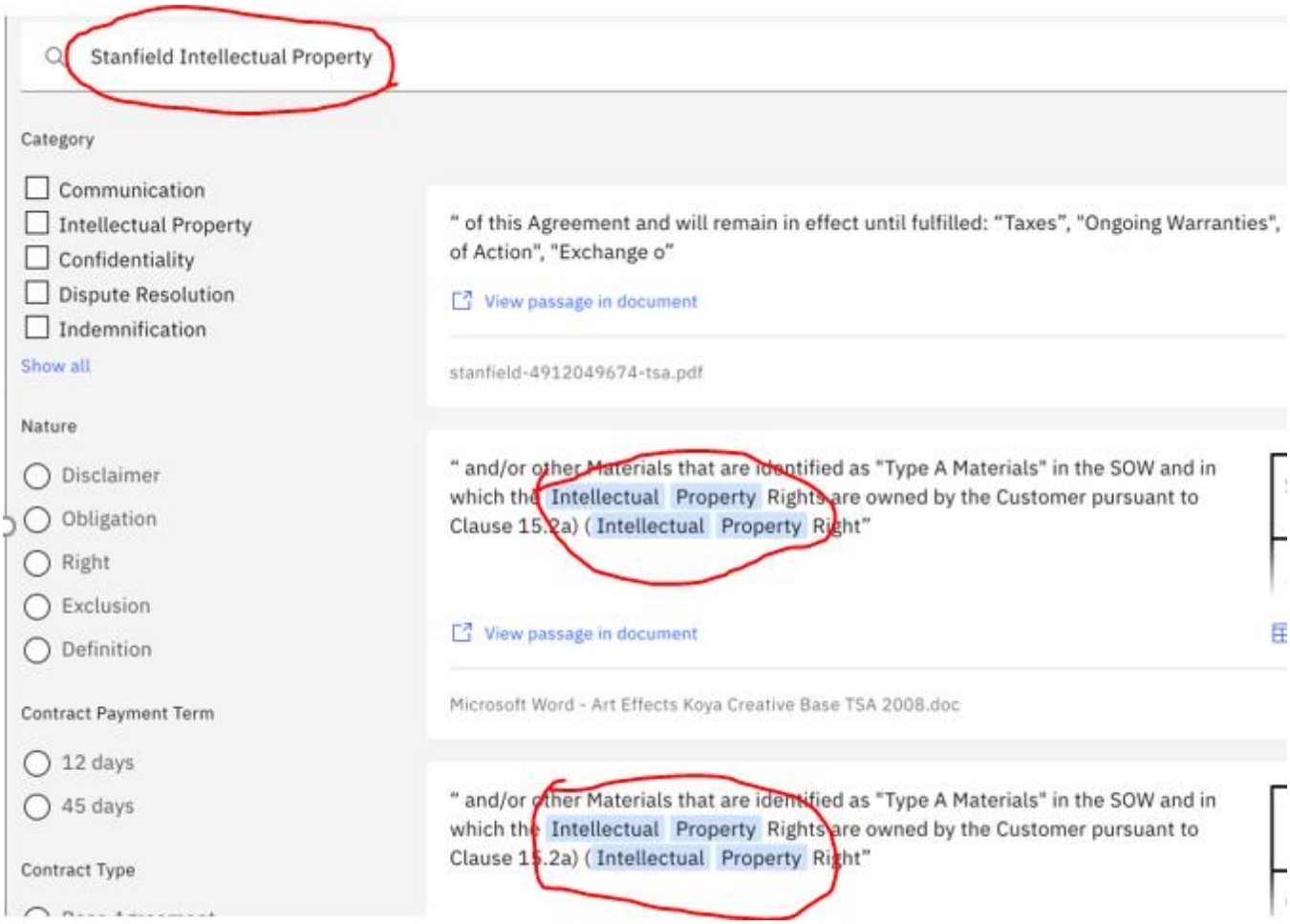
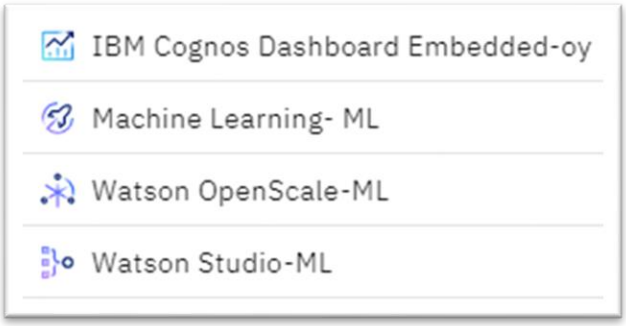


Figure 2 Example of using Watson Discovery To Uncover Common Categories

Required software, access, and files

1. To complete this lab, you will need a **Cloud Pak for Data as a Service** (**CPDaaS**) account: https://dataplatform.cloud.ibm.com
   If you don’t have a CPDaaS account, use the same URL to sign up for a free trial. The account will be activated in approximately 5 minutes.
2. If you already have an **IBM Cloud** account, make sure that you provisioned the required services
   a. **Watson Studio**
   b. **Watson Machine Learning (WML)**
   c. **Watson OpenScale**
   d. **IBM Cognos Dashboard Embedded.**
3. Navigate to your *Resource list* in your **IBM Cloud** dashboard: https://cloud.ibm.com/resources
4. Check if the mentioned services are displayed under **Services**. If not, search for the services in the **Catalog** and add them.



NOTE: You will likely not have the same endings. (IE. '-oy' and '-ML')

5. Download the **project zip file** to your machine. It will be imported into a Cloud Pak For Data Project.

6. Please visit this git repository to download all the files for this workshop.

7. STOP Watch this recording before you proceed! It will step you through the demo in approx. 9 minutes.

Download These Files From Git

1) **Intelligent-Contracts.zip**
Import this zip file when creating a new IBM Watson Studio Project
It will include the following project assets:

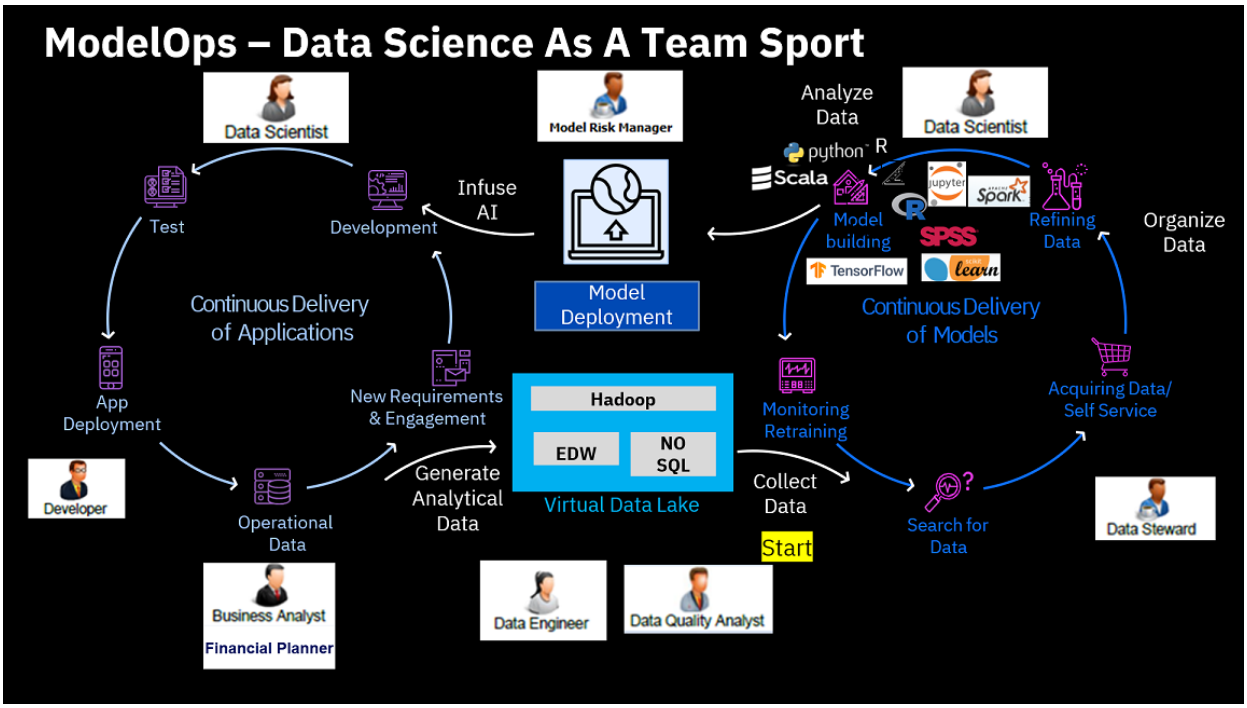
- 3 CSV files - Scored_Contracts.csv, Contract_Analysis.csv, Unscored_Contracts.csv
- Python Notebook - ContractSuccessRandomForest-Py38 Using Sklearn - Using Open Source SkLearn Python with a Random Forest Model deployed to IBM Platform
- Modeler Flow - Build and deploy the same Python model without the need fof coding
- Dashboard - Historical and Predictive Visualizations using structured and unstructered contract data
- Model - Contract Success Using AutoAI - P3 Snap Random Forest Classifier - This model was generated by AutoAI. We will deploy in the workshop.

2) **Intelligent-Contracts-Workshop-Guide.pdf (CURRENT DOCUMENT)**
Use this step-by-step workbook to:

- Automate Contract Workflow (Ingestion, Analysis, Approvals)
  Uses Cloud Pak For Business Automation
- b) Enrich Intelligence Accuracy (Extracting Information from Contracts)
  Uses Cloud Pak For Data Watson Discovery
- c) Integrate Continuous Improvement (Infusing AI into the Operation)
  Uses Cloud Pak For Data Watson Studio

3) **data_science_modelops_team_sport.png**

ModelOps as a Team Sport image depicting all those involved in delivering AI models and how IBM has them all collaborate together on one platform.



4) **contracts.zip [Already used in previous workshop]**
Sample contracts used in demo with Watson Discovery and used in the modelOps workflow.

5) **modelOpsForContractSuccess.mp4**
A recording of the end to end modelOps demo.

6) **csv_files.zip**
(Optional) Start a new Project in Cloud Pak For Data, import these CSV files and create all the project assets yourself from scratch.
Watch the video as a guide.

7)**Trustworthy AI.mp4**
(Optional) In this 9 minute recording, learn how IBM provides AI guardrails by monitoring key model metrics on and off our platform using OpenScale to avoid data bias or drift with model risk workflow to adhere to regulator guidelines like SR 11–7 that requires model risk management for all models in financial services using OpenPages.

8)**ContractSuccessRandomForest-Py38 Using Sklearn.ipynb**
(Optional) Import this Python notebook using Open Source Sklearn and Random Forest Model.

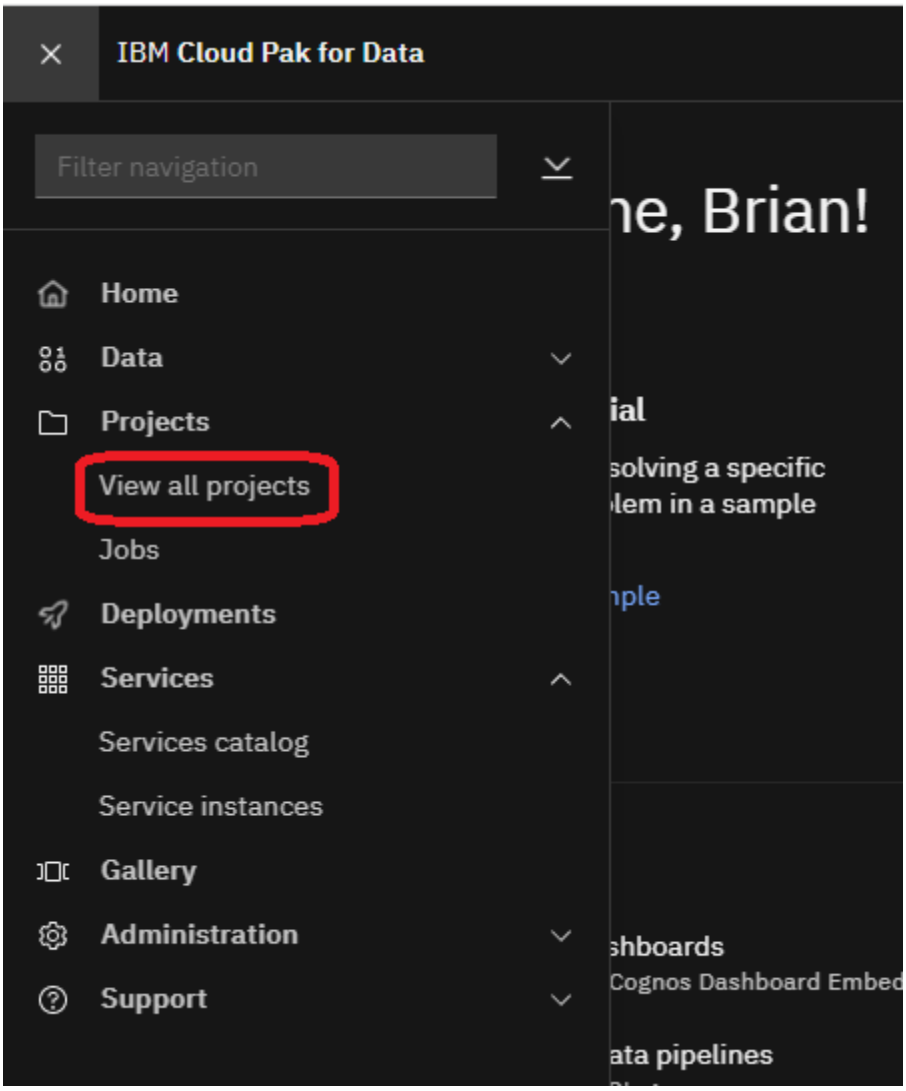
Required skills

We recommend that users who work through this lab:

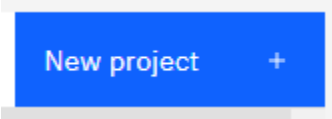
- Understand the data science model lifecycle
- Have at least beginner knowledge of different methods for creating models

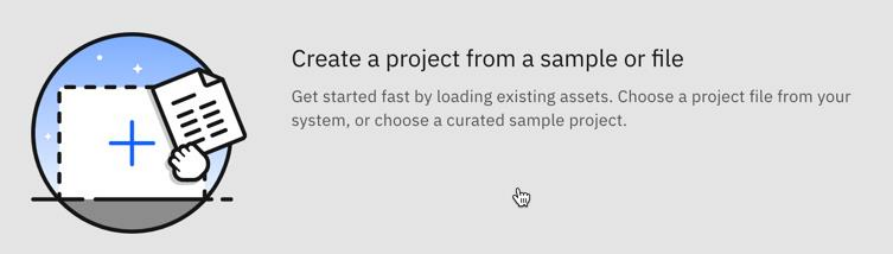
Step 1: Import Intelligent-Contracts.zip As New IBM Watson Studio Project

1. Sign into Watson Studio. From the quick navigation on the left, select **Projects → View all projects**.



2. On the far right, click the **New project**, then select **Create a project from a sample or file**.





3. Drag the *project zip* file (downloaded from Git) from your machine to the **Upload file** section.
   Name your project **Intelligent Contracts**
   Select a **Cloud Object Storage** service
   Select **Dashboard Service** from the dropdown list
   Click **Create**.

4.