**SW-1**

**Machine Learning Data Creation for SolidWorks Using the Toolbox Add-In**

**Project Scope:**

1. **Create SolidWorks Desktop add-in to simplify data labeling and creation process.**
2. **Read mate-reference data for all the components in the SolidWorks Toolbox add-in.**
3. **Following mate reference data extracted from SW.**

* Number of mate reference entity.
* Entity Type. Such as Face, Edge, Axis etc.
* Geometry Type. Such as Cylindrical, Planner etc.
* Reference type. Such as Tangent, Coincident etc.
* Reference Alignment. Such as Aligned, closed etc.
* Measure Data to get the area, perimeter and diameter.
* To get the persistence ID and Surface ID.
* Verify JSON data.
* The generated data save in JSON file format.
* Create a directory structure as per SOW.
* To generate a data for 1800+ components.

1. **To create a standalone utility for data validation.**

**SW-2**

**Machine Learning Assembly Data Creation for SolidWorks**

**Project Scope:**

* Created SolidWorks Add-in which automatically generate different variants of base models.
* Model variant is created upon range of global parameter. Based on permutation and combination.
* For each model, created an excel sheet that has all the variations of the model parameters used to create different variants of the model.
* Created meaningful variants of base assembly models by using a variety of parts.

**SW-3**

**Machine Learning Data Creation for SolidWorks Data labeling.**

**Project Scope:**

* Created SolidWorks Add-in which automatically read all the CAD drawings one by-one. The add-in will analyze each drawing and help identify the following elements of a CAD drawing.
* Here’s a list of various types of CAD drawing elements that need to be identified.
  + Text Boxes for dimensions and annotations.
  + Arrow Type.
  + Dims with tolerance. (Basic, Bilateral, Limit)
* The generated labeled data saved in a JSON file format.

AutoCAD-1

Quote Tool

Project Scope: