



Data Challenge '22

The submission guidelines for competition entries as well as the process for evaluating models are outlined in the following slides

Submission Guidelines



Submission Format



- Each submission entry must include:
- **Test Classification:** the jupyter notebook that runs the classification tasks on new data
- Models: the trained models that will be used to classify new data
- Short Paper: a short paper (Max 4 pages) describing the team solution



AOILabel: Test Classification

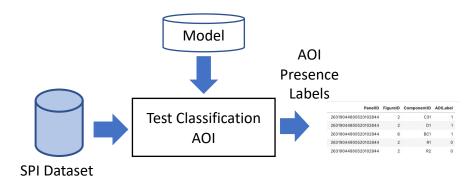


• Input:

- Dataset Path: <string> the path where the SPI dataset is located, e.g., Data/
- SPI name: <string> the name of the SPI dataset to classify e.g.,
 SPI_dataset.csv
- Test Classification AOI reads the Model internally
 - Predicts the AOI label for the components present in SPI dataset.

• Output:

- AOILabels: <string> the components label assigned by the classifier
 - **0:** The component may have a defect and will be present in the AOI dataset
 - 1: The component is good no information in the AOI dataset is available



PanelID	FigureID	Date	Time	ComponentID	PinNumber	PadID	•••	Shape(um)	PosX(mm)	PosY(mm)	Resul
25319088000520102844	1.0	9/11/2019	00:07:04	BC1	1	1.0		0.0	55.6	23.6	GOO
25319088000520102844	1.0	9/11/2019	00:07:04	BC1	2	2.0		0.0	48.5	23.6	GOO
25319088000520102844	1.0	9/11/2019	00:07:04	BC2	1	3.0		0.0	13.4	23.6	GOO
25319088000520102844	1.0	9/11/2019	00:07:04	BC2	2	4.0		0.0	20.5	23.6	GOO
25319088000520102844	1.0	9/11/2019	00:07:04	BC3	1	5.0		0.0	55.6	45.6	GOO
	-							_			
27219034900520102844	8.0	7/29/2019	23:26:35	U5	6	3156.0		44.4	43.5	87.9	GOO
27219034900520102844	8.0	7/29/2019	23:26:35	U5	7	3157.0		46.7	43.5	86.6	GOO
27219034900520102844	8.0	7/29/2019	23:26:35	U5	8	3158.0		44.4	43.5	85.4	GOO
27219034900520102844	8.0	7/29/2019	23:26:35	Z1	1	3159.0		42.6	43.1	82.4	GOO
27219034900520102844	8.0	7/29/2019	23:26:35	Z1	2	3160.0		53.3	43.1	80.0	GOO



OperatorLabel: Test Classification



• Input:

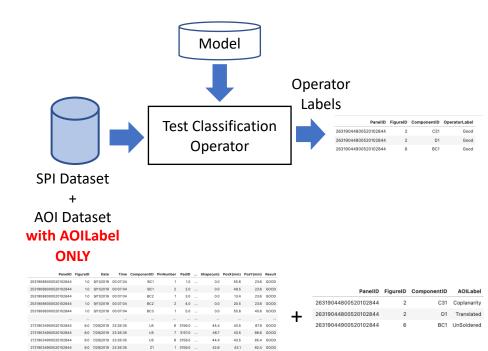
- Dataset Path: <string> the path where the SPI dataset is located, e.g., Data/
- **SPI name**: **<string>** the name of the SPI dataset
- **SPI name**: **<string>** the name of the AOI dataset to classify (e.g., AOI dataset.csv)
 - NB: The AOI dataset contains <u>only the AOILabel</u>. This is the only additional feature available.

• *Test Classification Operator* reads the **Model** internally

 Predicts the operator label for the components present in **both** the SPI and the AOI datasets.

Output:

- OperatorLabels: <string> the components label assigned by the classifier.
 - **Good**: the AOI raised a false defect
 - Bad: the operator confirms the AOI message





RepairLabel: Test Classification



Input:

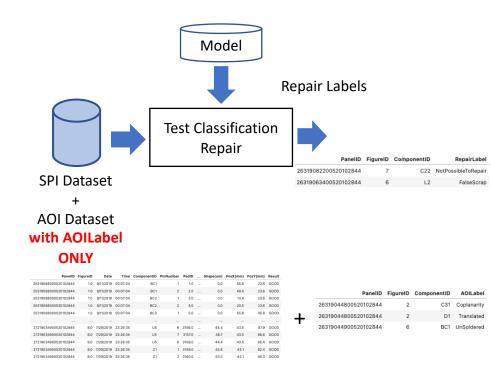
- Dataset Path: <string> the path where the SPI dataset is located, e.g., Data/
- SPI name: <string> the name of the SPI dataset
- SPI name: <string> the name of the AOI dataset to classify (e.g., AOI dataset.csv)
 - NB: The AOI dataset contains <u>only the AOILabel</u>. This is the only additional feature available.

• Test Classification Repair reads the Model internally

 Predicts the repair label for the components present in **both** the SPI and the AOI datasets.

Output:

- RepairLabels: <string> the components label assigned by the classifier.
 - NotPossibleToRepair: impossible to repair. The Panel is discarded.
 - **FalseScrap**: the operator raised a false defect as the component does not need any repair operation.



Model Performance Evaluation

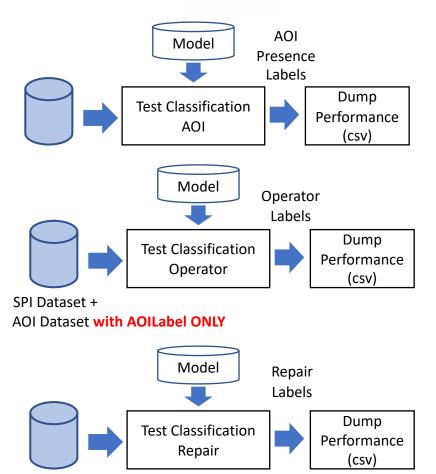
The Notebook TestPerformance is provided to illustrate the performance evaluation process



RepairLabel: Test Classification



- The test Classification AOI runs to predict the AOI presence labels
 - Labels are stored in a output file for following performance evaluation
- 2. The test Classification AOI runs to predict the Operator labels
 - Labels are stored in a output file for following performance evaluation
- The test Classification AOI runs to predict the Repair labels
 - Labels are stored in a output file for following performance evaluation



SPI Dataset +
AOI Dataset with AOILabel ONLY