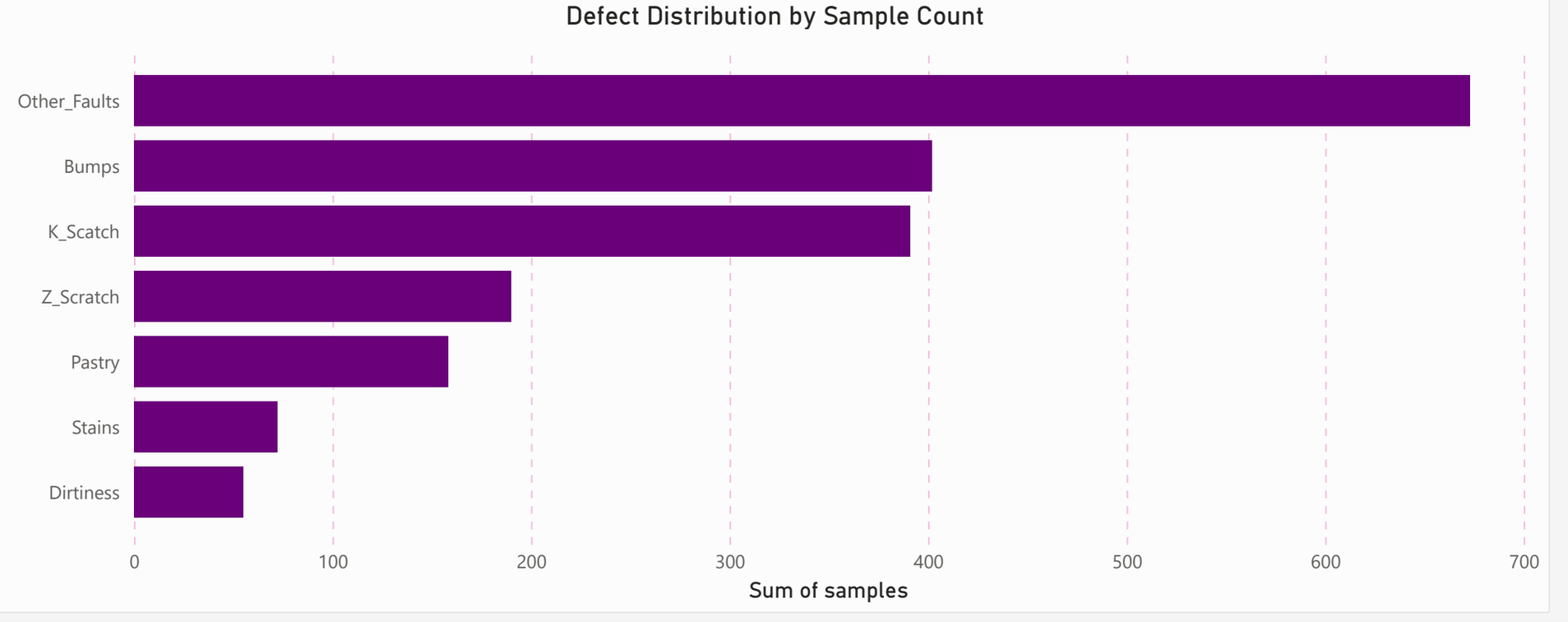
Steel Defect Detection - Dataset Overview

Total Sample	Defect Types	Total Features	Imbalance Ratio
1941	7	19	12,24

Imbalance Ratio
Class Imbalance

Defect
- [ ] Bumps
- [ ] Dirtiness
- [ ] K_Scatch
- [ ] Other_Faults
- [ ] Pastry
- [ ] Stains
- [ ] Z_Scratch

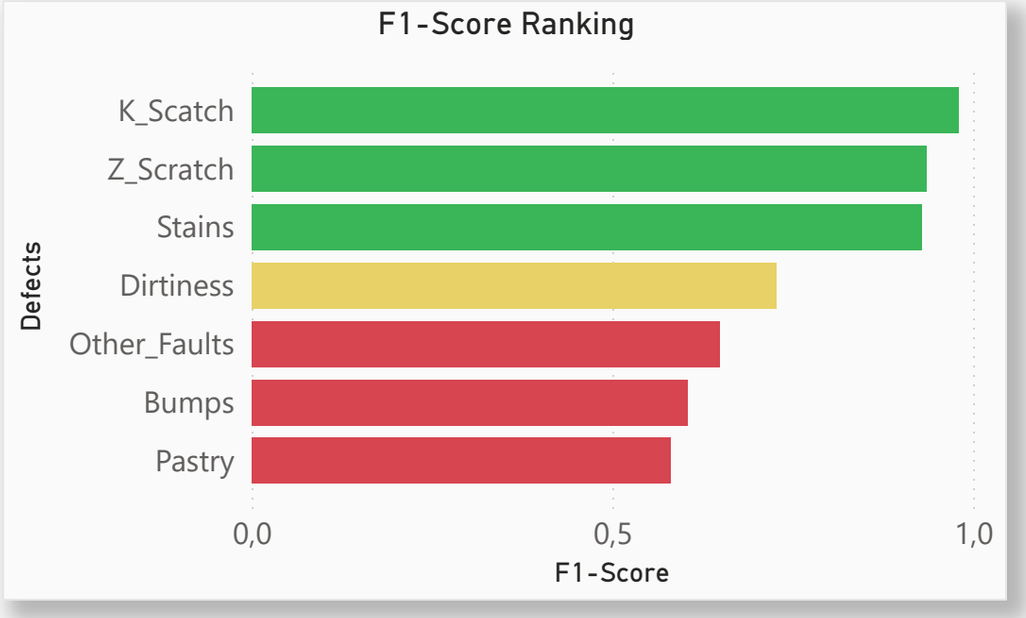


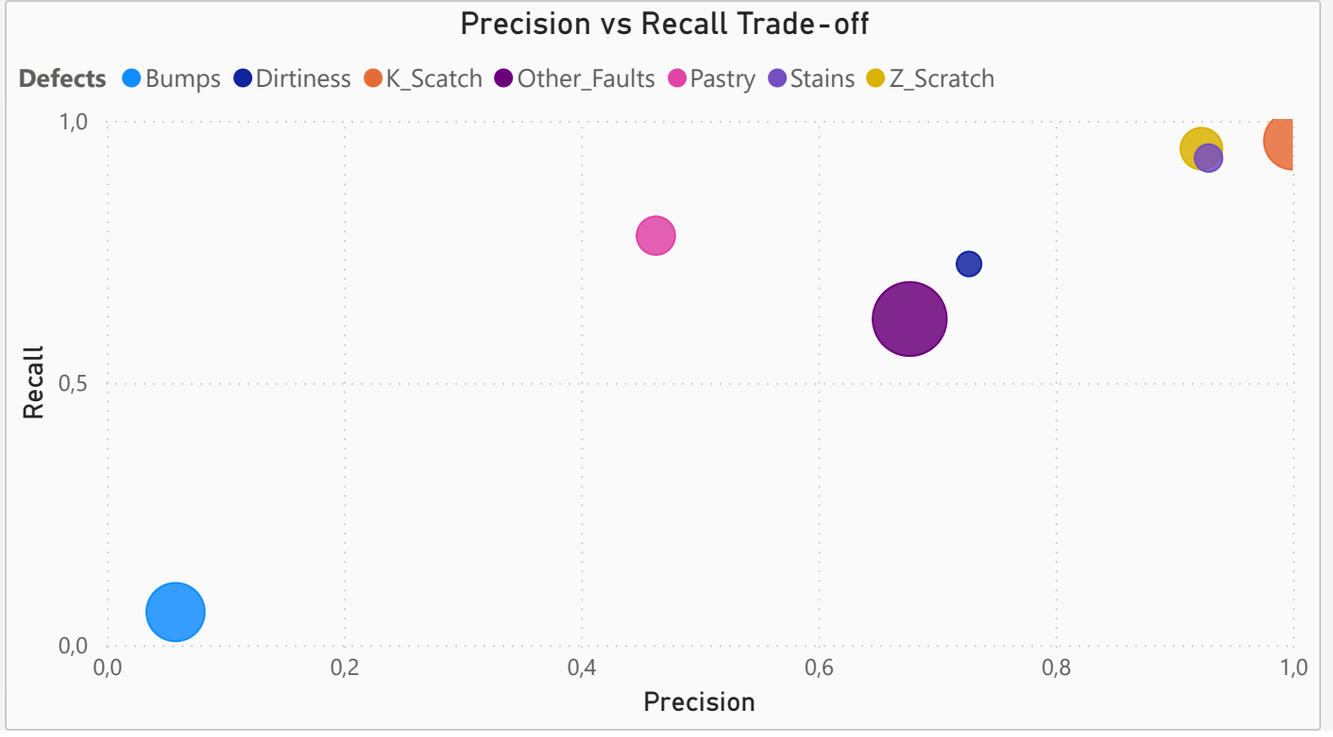
Model Performance Analysis

Weighted F1	Best Model: K_Scatch	2nd Best: Z_Scatch	3rd Best: Stains
	F1 Score	F1 Score	F1 Score
0,74	0,980	0,935	0,929

Defects

All





Feature Importance Analysis

Select Defect Type

All

Unique Features	Avg Importance	Max Importance
19	0,10	0,23

feature	Bumps	Dirtiness	K_Scatch	Other_Faults	Pastry	Stains	Z_Scratch
Edges_X_Index		0,084					
Edges_Y_Index					0,102		
Length_of_Conveyer	0,066			0,050			0,205
Log_X_Index			0,138		0,066		
Log_Y_Index	0,050					0,181	
LogOfAreas			0,109	0,062		0,228	
Orientation_Index		0,145			0,207		
Outside_Global_Index					0,074		
Outside_X_Index			0,099				
Pixels_Areas				0,050		0,149	
Square_Index	0,081	0,137			0,083		
Steel_Plate_Thickness			0,095	0,081			0,102
Sum_of_Luminosity				0,049		0,096	
TypeOfSteel_A300							0,108
TypeOfSteel_A400							0,098
X_Maximum		0,090					0,090
X_Minimum	0,052	0,088					
X_Perimeter			0,073				
Y_Perimeter	0,055					0,082