



# **MACHINE LEARNING DIABETES**



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# GOALS AND OBJECTIVES

## EDA n° 1

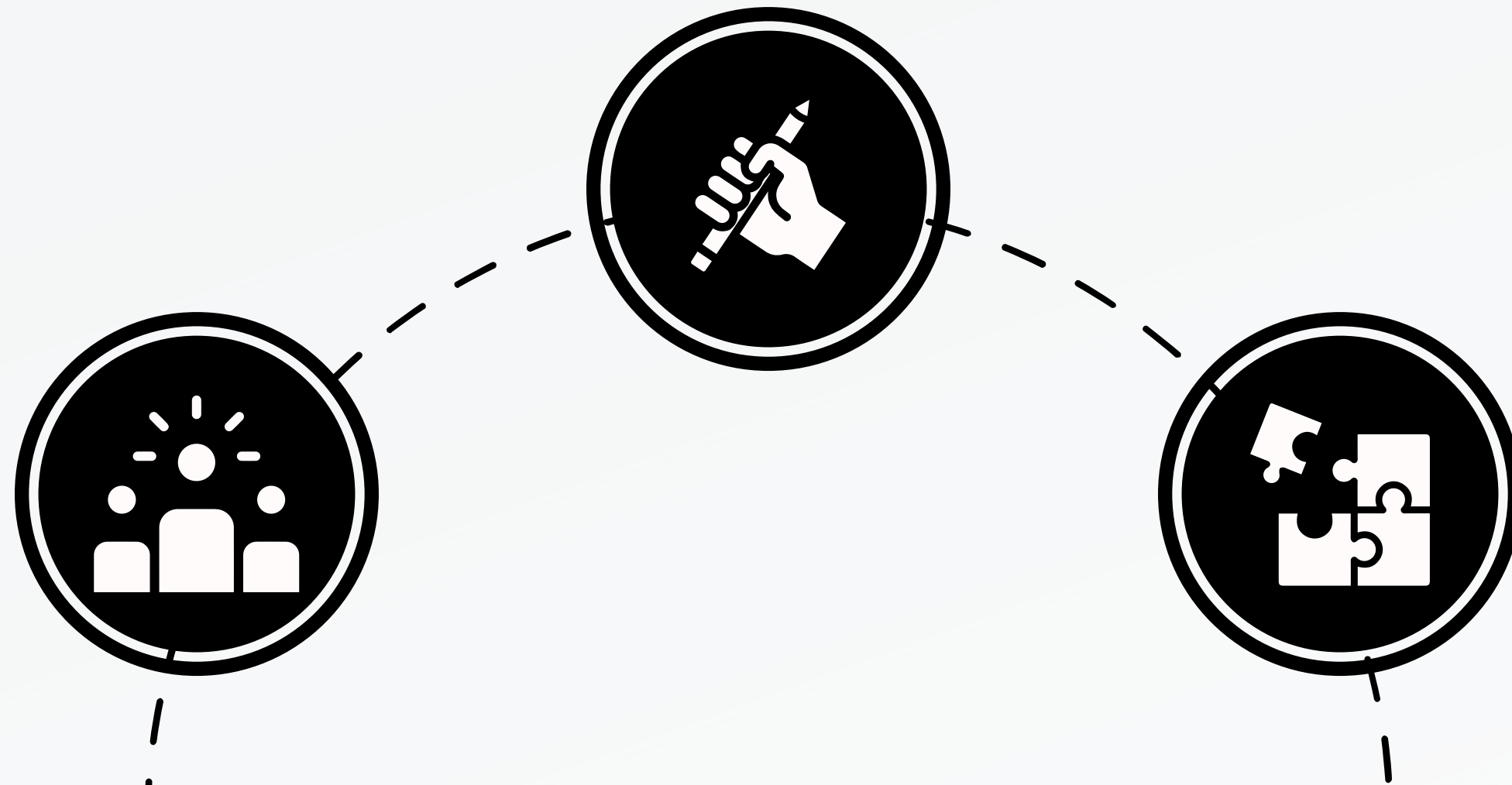
Exploring the data in order to gain insights into the structure and Modelling options

## Modelling° 2

Selecting 2 models based on the findings from the EDA process

## Training & Testign° 3

Testing Models & adding Hyper Parameters in order to increase accuracy of Model



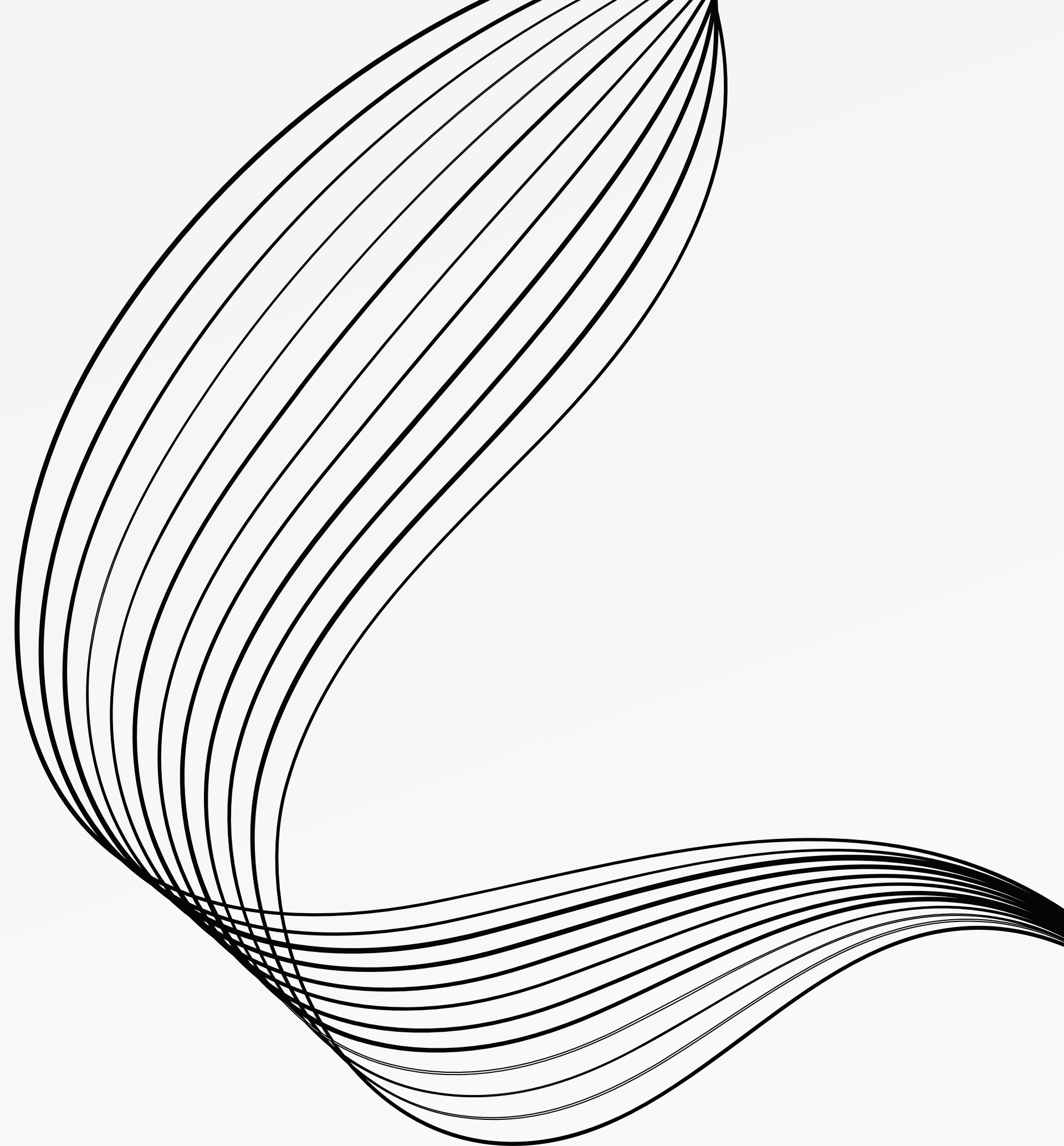


# PROBLEM DEFINITION

Creating a Supervised Learning Model based on  
Diabetes Dataset

# DATA PROCESSING

- *Data Cleaning*
- *Feature Engineering*
- *Model Building*







# EXPLORATION & VISUALIZATIONS



Pregnancies	Glucose	BloodPressure	SkinThickness	Insulin	BMI	DiabetesPedigreeFunction	Age	Outcome	C_BMI	C_InsulinScore	C_Glucose
6	148	72	35	0	33.6	0.627	50	1	Obesity 1	Abnormal	High
1	85	66	29	0	26.6	0.351	31	0	Overweight	Abnormal	Normal
8	183	64	0	0	23.3	0.672	32	1	Normal	Abnormal	High
1	89	66	23	94	28.1	0.167	21	0	Overweight	Normal	Normal
0	137	40	35	168	43.1	2.288	33	1	Obesity 3	Abnormal	High

Company



Company



Company



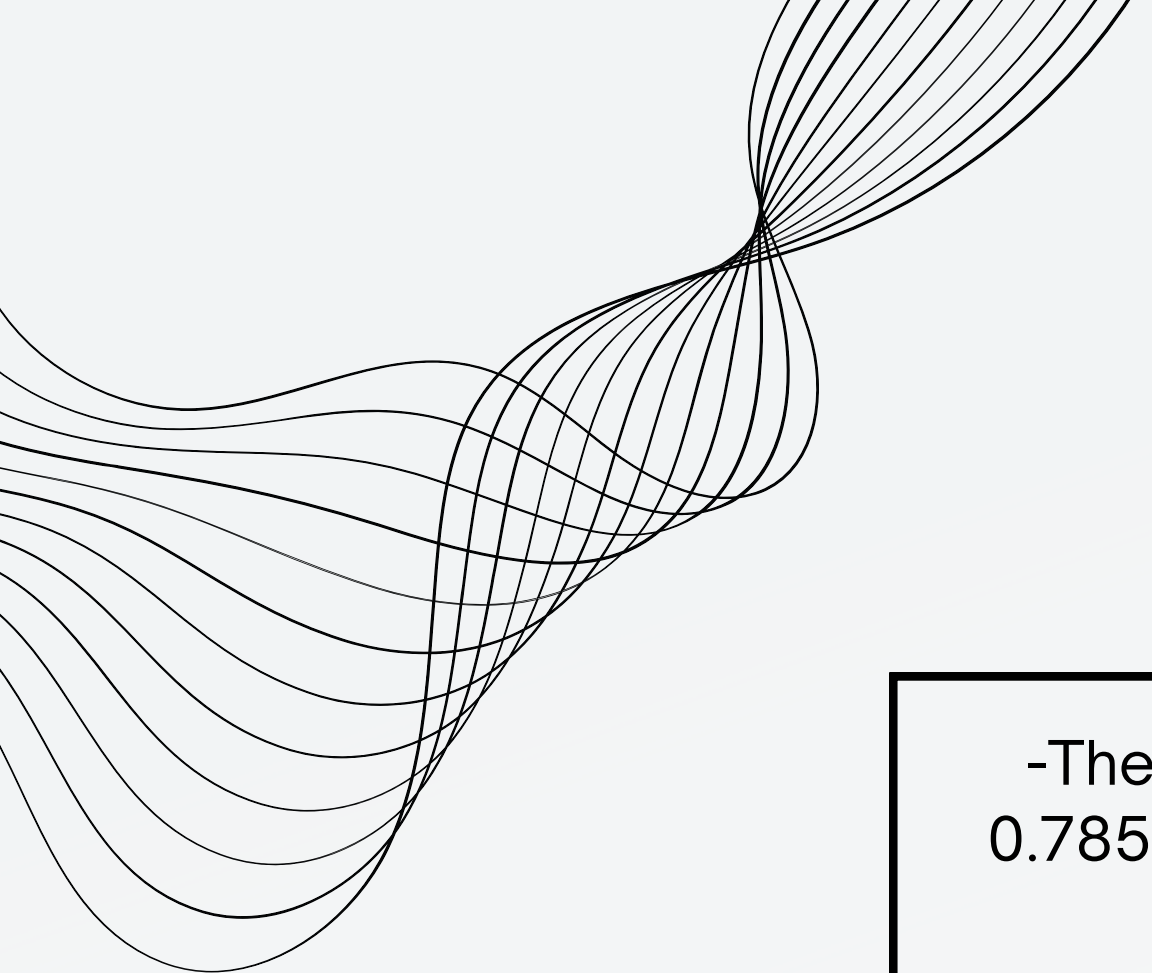
# MODELLING

	precision	recall	f1-score	support
0	0.78	0.92	0.85	105
1	0.79	0.53	0.64	58
accuracy			0.79	163
macro avg	0.79	0.73	0.74	163
weighted avg	0.79	0.79	0.77	163

# DECISION TREE

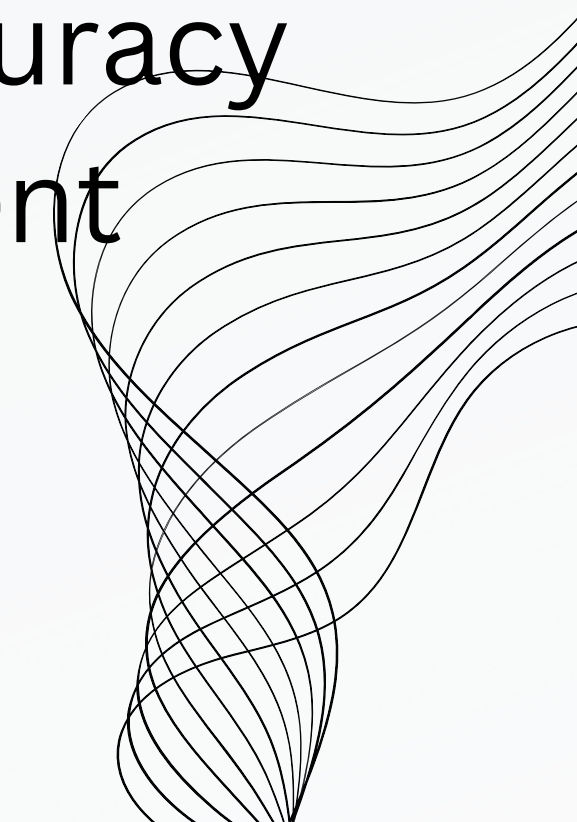
	precision	recall	f1-score	support
0	0.81	0.91	0.86	56
1	0.67	0.45	0.54	22
accuracy			0.78	78
macro avg	0.74	0.68	0.70	78
weighted avg	0.77	0.78	0.77	78

# SVD MODEL



-The Decision Tree model achieved a higher accuracy score of 0.785276 compared to the Support Vector Machine (SVC) model, which scored 0.754601.

Further Analyzes required as the SVD model accuracy predicting closer to 1 needs More improvement







# CONCLUSION

**BOTH MODELS SHOW REASONABLE  
PERFORMANCE, WITH THE DECISION TREE  
MODEL HAVING A SLIGHTLY BETTER  
ACCURACY, MAKING IT A FAVORABLE  
CHOICE FOR THIS SPECIFIC TASK.**

