AMRITA VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT, 1956

24AIM111 Introduction to Data Structure and Algorithm
23MAT112 Mathematics for Intelligent System 2

Encryption of dataset using homomorphic and quantum homomorphic encryption

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WORK DONE

BEFORE REVIEW-1

- Encryption of Iris dataset for Analysis of the Dataset transformation

- Mathematics behind homomorphic encryption

AFTER REVIEW-1

- Implemented 3 models with different scheme BFV,CKKS,QHE and Encrypted diabetes dataset with feature and outcome label and used logistic regression

- QSVM to evaluate the model performance in encrypted dataset.

ADDRESSING FEEDBACK FROM LAST REVIEW:

FEEDBACK GIVEN	HOW WE SOLVED IT
Encryption of the Iris dataset.	Encryption of the medical dataset(diabetes dataset).
Encrypting dataset should have important parameters.	Our dataset contain some important parameters like vital signs and clinical biomarkers.

OUTPUT

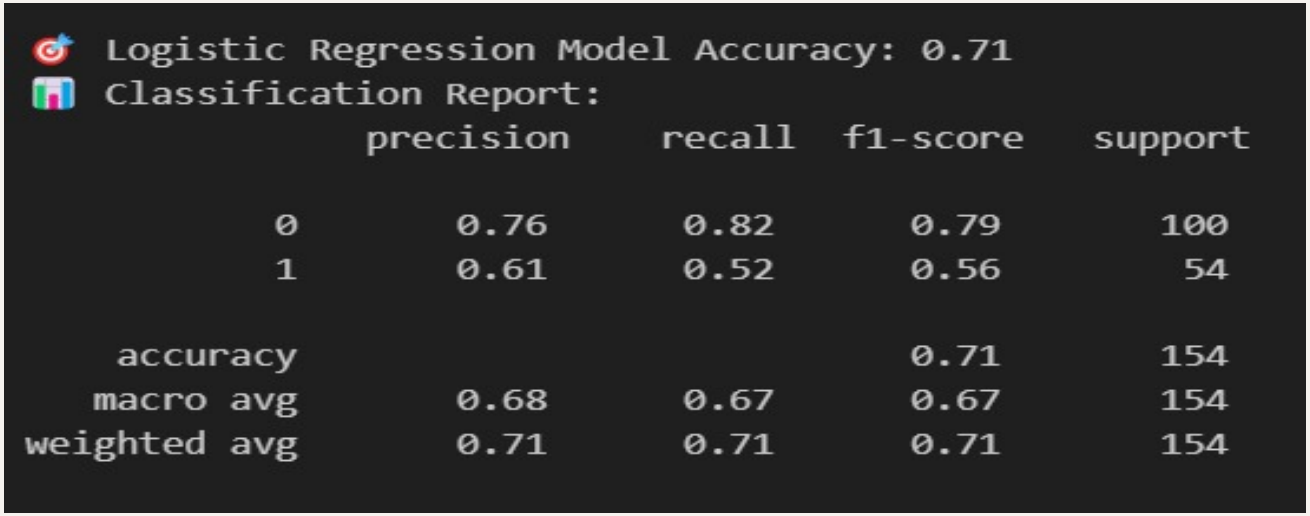
Homomorphic Encryption using CKKS

🎯 Model Accuracy: 0.74
📊 Classification Report:

	precision	recall	f1-score	support
0	0.77	0.87	0.82	150
1	0.68	0.52	0.59	81
accuracy			0.74	231
macro avg	0.72	0.69	0.70	231
weighted avg	0.74	0.74	0.74	231

OUTPUT

Homomorphic Encryption using BFV



🎯 Logistic Regression Model Accuracy: 0.71
📊 Classification Report:

	precision	recall	f1-score	support
0	0.76	0.82	0.79	100
1	0.61	0.52	0.56	54
accuracy			0.71	154
macro avg	0.68	0.67	0.67	154
weighted avg	0.71	0.71	0.71	154

Quantum homomorphic encryption accuracy: 66%

THANK YOU