ML Project:

Credit Card Fraud

Kingston Yip

amazon

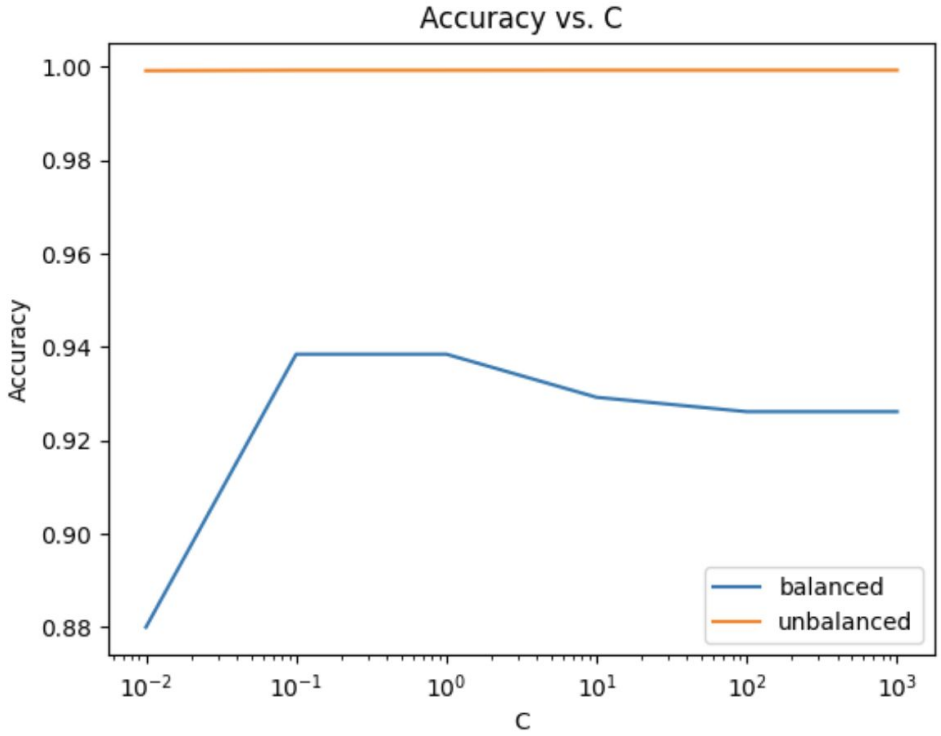
Pre-processing

Pre-processing

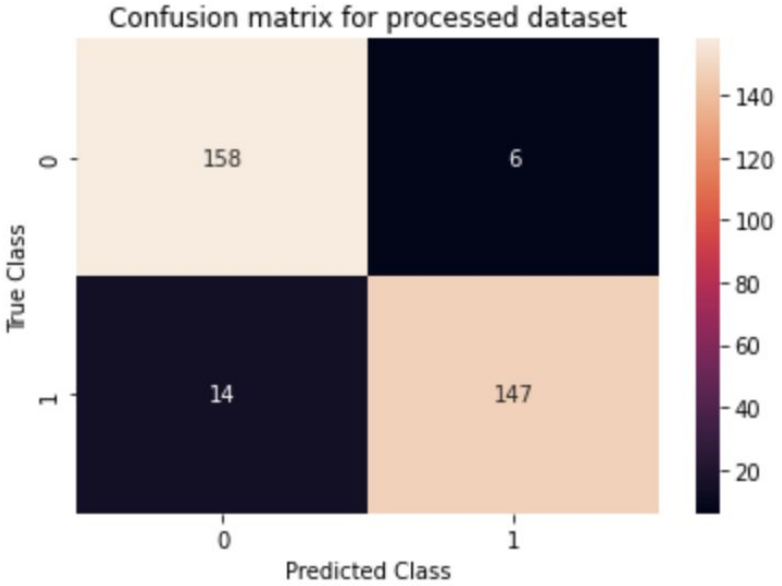
	scaled_amt	scaled_time	V1	V2	V3	V4	V5	V6	V7	V8	...	V20	V21	V22	V23	V24
0	1.783274	-0.994983	-1.359807	-0.072781	2.536347	1.378155	-0.338321	0.462388	0.239599	0.098698	...	0.251412	-0.018307	0.277838	-0.110474	0.066928
1	-0.269825	-0.994983	1.191857	0.266151	0.166480	0.448154	0.060018	-0.082361	-0.078803	0.085102	...	-0.069083	-0.225775	-0.638672	0.101288	-0.339846
2	4.983721	-0.994972	-1.358354	-1.340163	1.773209	0.379780	-0.503198	1.800499	0.791461	0.247676	...	0.524980	0.247998	0.771679	0.909412	-0.689281
3	1.418291	-0.994972	-0.966272	-0.185226	1.792993	-0.863291	-0.010309	1.247203	0.237609	0.377436	...	-0.208038	-0.108300	0.005274	-0.190321	-1.175575
4	0.670579	-0.994960	-1.158233	0.877737	1.548718	0.403034	-0.407193	0.095921	0.592941	-0.270533	...	0.408542	-0.009431	0.798278	-0.137458	0.141267
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
284802	-0.296653	1.034951	-11.881118	10.071785	-9.834783	-2.066656	-5.364473	-2.606837	-4.918215	7.305334	...	1.475829	0.213454	0.111864	1.014480	-0.509348
284803	0.038986	1.034963	-0.732789	-0.055080	2.035030	-0.738589	0.868229	1.058415	0.024330	0.294869	...	0.059616	0.214205	0.924384	0.012463	-1.016226
284804	0.641096	1.034975	1.919565	-0.301254	-3.249640	-0.557828	2.630515	3.031260	-0.296827	0.708417	...	0.001396	0.232045	0.578229	-0.037501	0.640134
284805	-0.167680	1.034975	-0.240440	0.530483	0.702510	0.689799	-0.377961	0.623708	-0.686180	0.679145	...	0.127434	0.265245	0.800049	-0.163298	0.123205
284806	2.724796	1.035022	-0.533413	-0.189733	0.703337	-0.506271	-0.012546	-0.649617	1.577006	-0.414650	...	0.382948	0.261057	0.643078	0.376777	0.008797

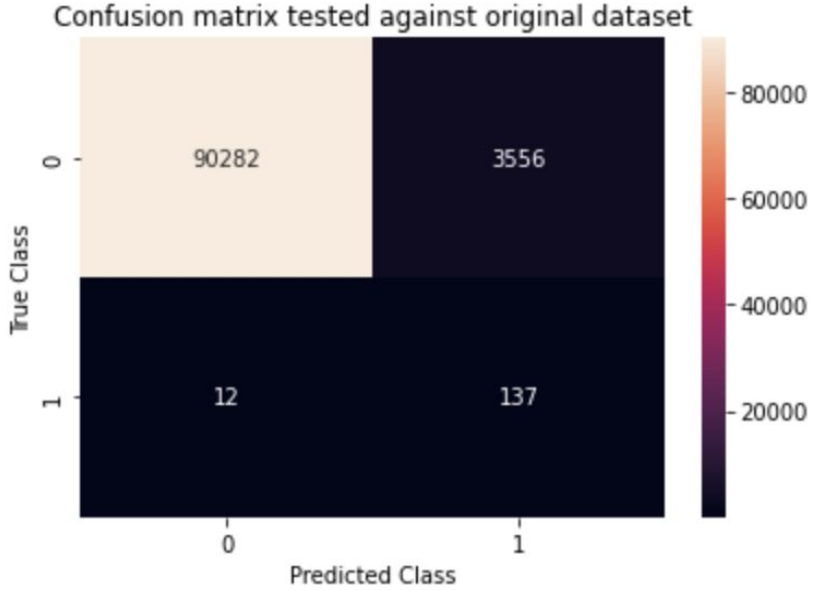
284807 rows × 31 columns

Logistic Regression

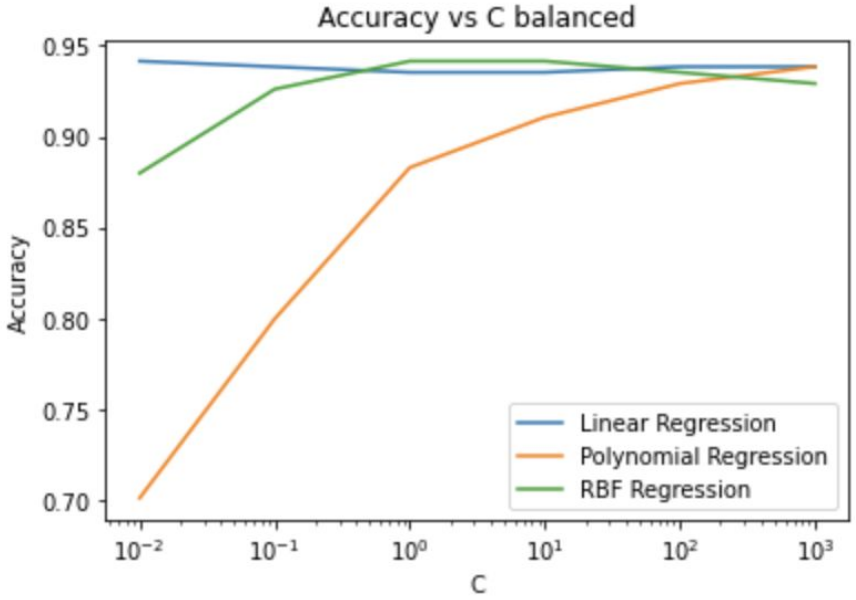


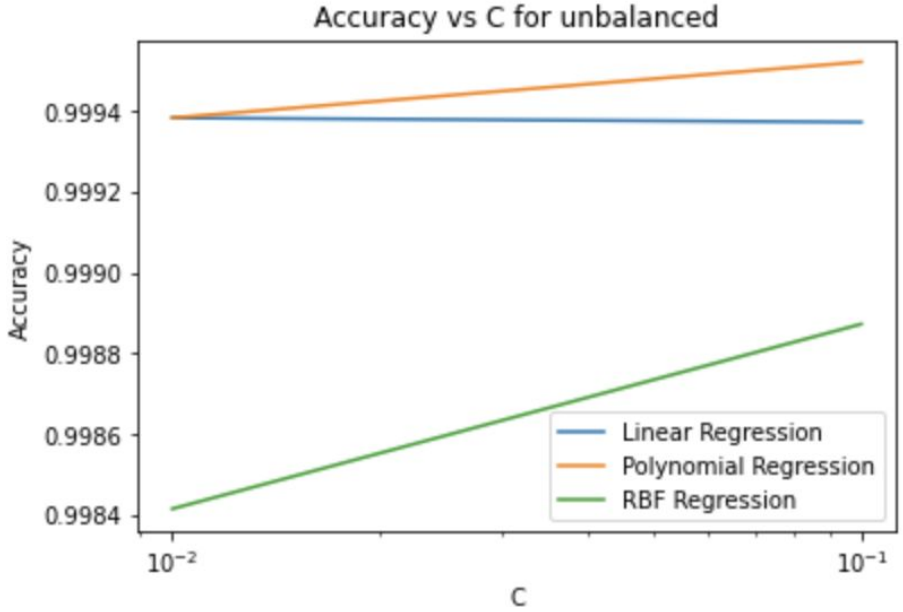
Logistic Regression





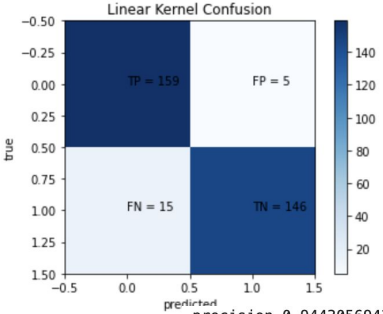
SVM


Accuracy vs C balanced
Accuracy
C
Linear Regression
Polynomial Regression
RBF Regression

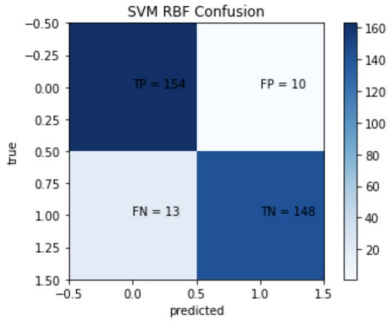

Accuracy vs C for unbalanced
Accuracy
C
Linear Regression
Polynomial Regression
RBF Regression

SVM

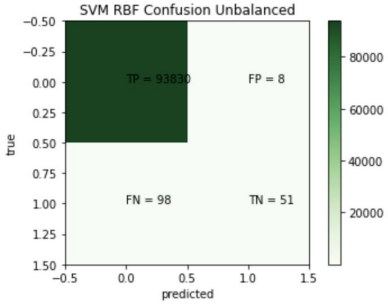
precision 0.9403402603334095
recall 0.9381722466292985
f-score 0.9383629191321499



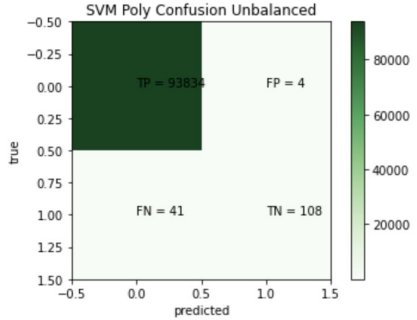
precision 0.9294322746911241
recall 0.9291395243144978
f-score 0.9292066408432696



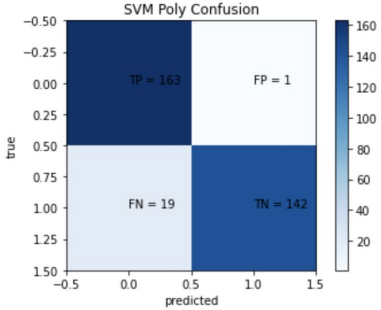
precision 0.9316817136530109
recall 0.6710983129428684
f-score 0.7449100414673255



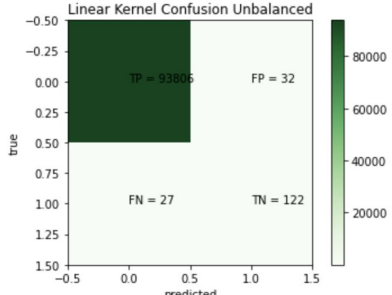
precision 0.9819244816435229
recall 0.8623947940553268
f-score 0.913673239613592



precision 0.9443056943056943
recall 0.9379450083320708
f-score 0.9382035290538485



precision 0.8959600234791265
recall 0.9092254665365743
f-score 0.9024830740503276



Kingston Yip

Neural Networks

Balanced

Activation Function	Average Accuracy
ReLU	0.7101538419723511
Tanh	0.8846153914928436
Sigmoid	0.8815384566783905

Unbalanced

Activation Function	Average Accuracy
ReLU	0.9994573593139648
Tanh	0.9994893074035645
Sigmoid	0.9994467496871948

ML Project:

Credit Card Fraud

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