Model Feature_Se Split	Accuracy	Precision	Recall	F1-Score	ROC-AUC Tuning_Met
Logistic Re <sub>{</sub> W100_O0 80/20	0.55548	0.565496	0.543455	0.544551	0.917485 GridSearch
Logistic Re <sub>{</sub> W100_O0 70/30	0.559892	0.564735	0.550118	0.548941	0.919607 GridSearch
Logistic Re <sub>{</sub> W100_O50 80/20	0.570097	0.57197	0.559935	0.557734	0.919983 GridSearch
Logistic Re{W100_O50 70/30	0.573963	0.575353	0.562511	0.561486	0.920218 GridSearch
Logistic Re <sub>{</sub> W200_O0 80/20	0.614548	0.610784	0.59571	0.59653	0.934699 GridSearch
Logistic Re <sub>{</sub> W200_O0 70/30	0.616221	0.614821	0.601867	0.602603	0.931457 GridSearch
Logistic Re{W200_O50 80/20	0.595563	0.60546	0.583972	0.586694	0.928793 GridSearch
Logistic Re <sub>{</sub> W200_O50 70/30	0.601593	0.615294	0.593049	0.592802	0.93232 GridSearch
Logistic Re <sub>{</sub> W300_O0 80/20	0.603889	0.617506	0.591571	0.594811	0.937541 GridSearch
Logistic Re <sub>{</sub> W300_O0 70/30	0.609556	0.618041	0.600687	0.60589	0.94109 GridSearch
Logistic Re <sub>{</sub> W300_O50 80/20	0.628027	0.63346	0.627147	0.623269	0.947012 GridSearch
Logistic Re <sub>{</sub> W300_O50 70/30	0.62706	0.632251	0.623314	0.622241	0.943944 GridSearch
Logistic Re <sub>{</sub> W400_O0 80/20	0.632373	0.65207	0.622857	0.623871	0.949722 GridSearch
Logistic Re <sub>{</sub> W400_O0 70/30	0.641682	0.645762	0.637368	0.63237	0.950084 GridSearch
Logistic Re <sub>{</sub> W400_O50 80/20	0.666436	0.667438	0.653671	0.656398	0.952966 GridSearch
Logistic Re <sub>{</sub> W400_O50 70/30	0.655904	0.658077	0.643458	0.646957	0.951212 GridSearch
Logistic Re <sub>{</sub> W500_O0 80/20	0.613402	0.634112	0.619699	0.622606	0.949545 GridSearch
Logistic Re <sub>{</sub> W500_O0 70/30	0.611684	0.625345	0.612048	0.61062	0.951855 GridSearch
Logistic Re <sub>{</sub> W500_O50 80/20	0.644909	0.640476	0.624094	0.625839	0.951168 GridSearch
Logistic Re <sub>{</sub> W500_O50 70/30	0.652552	0.650465	0.633979	0.636147	0.952297 GridSearch
Decision Tr W100_O0 80/20	0.618065	0.615731	0.609139	0.609916	0.884426 GridSearch
Decision Tr W100_O0 70/30	0.620573	0.616952	0.606457	0.607415	0.878406 GridSearch
Decision Tr W100_O50 80/20	0.683845	0.674921	0.674765	0.67459	0.825376 GridSearch
Decision Tr W100_O50 70/30	0.672844	0.662566	0.659156	0.660376	0.827061 GridSearch
Decision Tr W200_O0 80/20	0.628824	0.613048	0.611287	0.610565	0.831964 GridSearch
Decision Tr W200_O0 70/30	0.630267	0.626217	0.620327	0.622447	0.828653 GridSearch
Decision Tr W200_O50 80/20	0.680205	0.666398	0.661872	0.663264	0.816615 GridSearch
Decision Tr W200_O50 70/30	0.683732	0.672319	0.667506	0.669234	0.817832 GridSearch
Decision Tr W300_O0 80/20	0.620266	0.638814	0.609876	0.612618	0.871358 GridSearch
Decision Tr W300_O0 70/30	0.643003	0.63554	0.632376	0.632196	0.849762 GridSearch
Decision Tr W300_O50 80/20	0.718187	0.711371	0.712705	0.711731	0.846377 GridSearch
Decision Tr W300_O50 70/30	0.705357	0.705353	0.699275	0.701313	0.834786 GridSearch
Decision Tr W400_O0 80/20	0.607682	0.616693	0.600506	0.603429	0.849084 GridSearch
Decision Tr W400_O0 70/30	0.624314	0.616589	0.615258	0.613192	0.840754 GridSearch
Decision Tr W400_O50 80/20	0.734256	0.721772	0.718682	0.719393	0.860612 GridSearch
Decision Tr W400_O50 70/30	0.71679	0.698276	0.70012	0.698655	0.835805 GridSearch
Decision Tr W500_O0 80/20	0.616838	0.61333	0.614159	0.609193	0.8499 GridSearch
Decision Tr W500_O0 70/30	0.619702	0.628357	0.607181	0.600951	0.877937 GridSearch
Decision Tr W500_O50 80/20	0.738033	0.717084	0.718169	0.717291	0.845949 GridSearch
Decision Tr W500_O50 70/30	0.721578	0.700732	0.699592	0.698361	0.841563 GridSearch
Random Fo W100_O0 80/20	0.742219	0.748494	0.725183	0.73129	0.96676 Randomize
Random Fo W100_O0 70/30	0.746447	0.748133	0.730776	0.735285	0.965068 Randomize
Random Fo W100_O50 80/20	0.810137	0.814026	0.795042	0.801133	0.979435 Randomize

Random Fo W100_O50 70/30	0.806984	0.812355	0.792472	0.799067	0.978778 Randomize
Random Fo W200_O0 80/20	0.768865	0.767128	0.751894	0.755545	0.969473 Randomize
Random Fo W200_O0 70/30	0.751246	0.749462	0.73023	0.734792	0.966279 Randomize
Random Fo W200_O50 80/20	0.810922	0.81731	0.791441	0.799263	0.978329 Randomize
Random Fo W200_O50 70/30	0.813879	0.820377	0.796992	0.803483	0.979354 Randomize
Random Fo W300_O0 80/20	0.767656	0.767003	0.751456	0.754543	0.968989 Randomize
Random Fo W300_O0 70/30	0.761092	0.764612	0.746571	0.751994	0.967815 Randomize
Random Fo W300_O50 80/20	0.854199	0.86343	0.850514	0.855174	0.987312 Randomize
Random Fo W300_O50 70/30	0.835165	0.842602	0.827636	0.832865	0.984205 Randomize
Random Fo W400_O0 80/20	0.790123	0.780938	0.780613	0.777934	0.974823 Randomize
Random Fo W400_O0 70/30	0.785192	0.781372	0.769391	0.771891	0.974646 Randomize
Random Fo W400_O50 80/20	0.851211	0.847075	0.841423	0.842408	0.985333 Randomize
Random Fo W400_O50 70/30	0.842712	0.840432	0.829914	0.833326	0.985765 Randomize
Random Fo W500_O0 80/20	0.774914	0.76936	0.771056	0.767969	0.973808 Randomize
Random Fo W500_O0 70/30	0.781214	0.773721	0.759536	0.758104	0.974858 Randomize
Random Fo W500_O50 80/20	0.871192	0.87157	0.852989	0.859093	0.987111 Randomize
Random Fo W500_O50 70/30	0.858469	0.854032	0.843503	0.846574	0.987588 Randomize
Gaussian NW100_O0 80/20	0.385656	0.393812	0.395456	0.372517	0.866637 Randomize
Gaussian NW100_O0 70/30	0.391383	0.396559	0.398639	0.372229	0.868375 Randomize
Gaussian NW100_O50 80/20	0.391931	0.41787	0.402427	0.379028	0.872349 Randomize
Gaussian NW100_O50 70/30	0.38332	0.409581	0.393787	0.368669	0.869955 Randomize
Gaussian NW200_O0 80/20	0.430999	0.445438	0.442531	0.407605	0.890772 Randomize
Gaussian NW200_O0 70/30	0.432714	0.440585	0.440001	0.411759	0.886266 Randomize
Gaussian NW200_O50 80/20	0.408532	0.414016	0.412759	0.376709	0.876795 Randomize
Gaussian NW200_O50 70/30	0.425484	0.43034	0.427993	0.394777	0.881746 Randomize
Gaussian NW300_00 80/20	0.429887	0.445836	0.436456	0.42249	0.891911 Randomize
Gaussian NW300_O0 70/30	0.446416	0.465461	0.45994	0.435849	0.896686 Randomize
Gaussian NW300_O50 80/20	0.441525	0.451734	0.453914	0.425096	0.899423 Randomize
Gaussian NW300_O50 70/30	0.442651	0.455502	0.451386	0.422819	0.897414 Randomize
Gaussian NW400_O0 80/20	0.41701	0.448258	0.435457	0.41417	0.894269 Randomize
Gaussian NW400_O0 70/30	0.464351	0.487591	0.479387	0.446412	0.903744 Randomize
Gaussian NW400_050 80/20	0.456747	0.467674	0.464431	0.432493	0.905215 Randomize
Gaussian NW400_050 70/30	0.451568	0.462014	0.459051	0.436053	0.902973 Randomize
Gaussian NW500_00 80/20	0.460481	0.501116	0.484291	0.454887	0.907039 Randomize
Gaussian NW500_O0 70/30	0.483391	0.506002	0.491125	0.470276	0.908947 Randomize
Gaussian NW500_O50 80/20	0.463882	0.479616	0.470033	0.451117	0.904655 Randomize
Gaussian NW500_050 70/30	0.454756	0.469782	0.461173	0.439614	0.907125 Randomize
SVM W100_O0 80/20	0.66069	0.662413	0.647834	0.651822	0.953313 GridSearch
SVM W100_O0 70/30	0.663885	0.665509	0.65214	0.655132	0.952854 GridSearch
SVM W100_O50 80/20	0.718596	0.727369	0.709923	0.715213	0.964005 GridSearch
SVM W100_O50 70/30	0.717595	0.728017	0.709814	0.71577	0.963591 GridSearch
SVM W200_O0 80/20	0.707002	0.718342	0.699095	0.703348	0.962315 GridSearch
SVM W200_O0 70/30	0.681468	0.685743	0.669307	0.673081	0.956559 GridSearch
SVM W200_O50 80/20	0.730717	0.740211	0.71423	0.72199	0.965533 GridSearch

SVM	W200_O50 70/30	0.73083	0.744117	0.71806	0.72499	0.966032 GridSearch
SVM	W300_O0 80/20	0.691914	0.71019	0.683155	0.690473	0.958862 GridSearch
SVM	W300_O0 70/30	0.695563	0.707517	0.684906	0.690825	0.96 GridSearch
SVM	W300_O50 80/20	0.774343	0.782285	0.77412	0.776406	0.977482 GridSearch
SVM	W300 O50 70/30	0.762706	0.770036	0.760306	0.763164	0.974374 GridSearch
SVM	W400_O0 80/20	0.713306	0.725878	0.705828	0.711612	0.966269 GridSearch
SVM	W400_O0 70/30	0.709324	0.714005	0.704958	0.706291	0.964664 GridSearch
SVM	W400_050 80/20	0.790311	0.795439	0.782848	0.785956	0.980316 GridSearch
SVM	W400_O50 70/30	0.7869	0.786751	0.776168	0.778826	0.978951 GridSearch
SVM	W500_O0 80/20	0.74055	0.75343	0.747827	0.748307	0.966607 GridSearch
SVM	W500_00 70/30	0.721649	0.736748	0.714536	0.720911	0.964835 GridSearch
SVM	W500_O50 80/20	0.791993	0.814884	0.784158	0.793783	0.981053 GridSearch
SVM	W500_O50 70/30	0.780742	0.796242	0.773801	0.781128	0.977729 GridSearch
KNN	W100_O0 80/20	0.697903	0.688766	0.677294	0.677638	0.913806 GridSearch
KNN	W100_00 70/30	0.68915	0.680426	0.67006	0.668412	0.91465 GridSearch
KNN	W100_00 76/00 W100_050 80/20	0.761485	0.756877	0.74747	0.749115	0.947874 GridSearch
KNN	W100_050 70/30	0.75387	0.749414	0.73753	0.739588	0.953236 GridSearch
KNN	W200_O0 80/20	0.691366	0.676422	0.665267	0.664401	0.928452 GridSearch
KNN	W200_00 70/30	0.671953	0.65949	0.649813	0.647005	0.921515 GridSearch
KNN	W200_00 76/00 W200_050 80/20	0.762457	0.75508	0.739157	0.742546	0.943029 GridSearch
KNN	W200_050 70/30	0.76587	0.761607	0.745069	0.748318	0.943211 GridSearch
KNN	W300_O0 80/20	0.689867	0.695358	0.666793	0.671396	0.921569 GridSearch
KNN	W300_O0 70/30	0.684642	0.675157	0.658221	0.65851	0.936628 GridSearch
KNN	W300_O50 80/20	0.780526	0.771728	0.763118	0.763887	0.953231 GridSearch
KNN	W300_O50 70/30	0.773695	0.763643	0.755437	0.756056	0.947329 GridSearch
KNN	W400_O0 80/20	0.69273	0.67584	0.66909	0.668168	0.921851 GridSearch
KNN	W400_O0 70/30	0.697441	0.685896	0.675208	0.677069	0.923189 GridSearch
KNN	W400_O50 80/20	0.795156	0.782551	0.779558	0.778624	0.961863 GridSearch
KNN	W400 O50 70/30	0.779059	0.770223	0.751667	0.755531	0.962182 GridSearch
KNN	W500_O0 80/20	0.704467	0.714605	0.688076	0.692941	0.931263 GridSearch
KNN	W500_O0 70/30	0.709049	0.701859	0.679082	0.681998	0.923492 GridSearch
KNN	W500_O50 80/20	0.815492	0.802558	0.794913	0.796668	0.965264 GridSearch
KNN	W500_O50 70/30	0.808005	0.792988	0.785521	0.787131	0.960356 GridSearch
	W100_O0 80/20	0.439107	0.415863	0.406615	0.395494	0.874744 Randomize
	W100 O0 70/30	0.437627	0.440064	0.408596	0.388143	0.871992 Randomize
	W100_O50 80/20	0.404136	0.422847	0.378863	0.365936	0.872753 Randomize
	W100_O50 70/30	0.459487	0.475724	0.431606	0.415776	0.876753 Randomize
	W200_O0 80/20	0.421482	0.436972	0.39515	0.372871	0.884883 Randomize
	W200_O0 70/30	0.423199	0.38317	0.387584	0.374135	0.878539 Randomize
	W200_O50 80/20	0.416382	0.422829	0.381667	0.375293	0.881943 Randomize
	W200_O50 70/30	0.431627	0.412303	0.402488	0.378269	0.876557 Randomize
	W300_O0 80/20	0.44217	0.450571	0.414394	0.400652	0.891385 Randomize
	W300_O0 70/30	0.423208	0.415437	0.394464	0.367654	0.893211 Randomize
	W300_O50 80/20	0.458527	0.429034	0.416979	0.395559	0.887496 Randomize
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AdaBaast 1//200 OF0 70/20	0.45004	0.401147	0.405700	0.4007	0.0000E0 Dandamiza
AdaBoost W300_O50 70/30 AdaBoost W400 O0 80/20	0.45364 0.449931	0.461147 0.4059	0.425706	0.4267 0.385196	0.890259 Randomize 0.891683 Randomize
AdaBoost W400_00 70/30	0.449931	0.389208	0.369096	0.361899	0.887017 Randomize
AdaBoost W400_00 70/30 AdaBoost W400 050 80/20	0.454671	0.473362	0.416031	0.407376	0.896497 Randomize
_	0.426199	0.446126	0.382622	0.370326	0.893459 Randomize
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AdaBoost W500_00 80/20	0.37457	0.397378	0.347996	0.333767	0.886557 Randomize
AdaBoost W500_O0 70/30	0.434135	0.400902	0.401035	0.358562	0.894587 Randomize
AdaBoost W500_050 80/20		0.400864	0.358637	0.325797	0.891318 Randomize
AdaBoost W500_O50 70/30	0.397912	0.469607	0.383351	0.376916	0.894968 Randomize
Gradient Bc W100_00 80/20	0.643775	0.637258	0.63073	0.631177	0.934798 Randomize
Gradient Bc W100_O0 70/30	0.64268	0.635455	0.629623	0.629713	0.937111 Randomize
Gradient Bc W100_O50 80/20	0.660959	0.65753	0.649427	0.648692	0.941659 Randomize
Gradient Bc W100_O50 70/30	0.661318	0.657034	0.646949	0.646963	0.942462 Randomize
Gradient Bc W200_O0 80/20	0.690687	0.674992	0.665246	0.664812	0.950491 Randomize
Gradient Bc W200_O0 70/30	0.681921	0.670104	0.66168	0.661206	0.946999 Randomize
Gradient Bc W200_O50 80/20	0.693515	0.691256	0.679856	0.681565	0.946866 Randomize
Gradient Bc W200_O50 70/30	0.694881	0.688209	0.680418	0.679071	0.948684 Randomize
Gradient Bc W300_O0 80/20	0.696008	0.685106	0.677362	0.678969	0.949633 Randomize
Gradient Bc W300_O0 70/30	0.703072	0.69243	0.683064	0.68411	0.954647 Randomize
Gradient Bc W300_O50 80/20	0.73931	0.737719	0.734993	0.733614	0.964975 Randomize
Gradient Bc W300_O50 70/30	0.72081	0.71545	0.7132	0.712229	0.962497 Randomize
Gradient Bc W400_O0 80/20	0.710562	0.696778	0.696784	0.69368	0.963118 Randomize
Gradient Bc W400_O0 70/30	0.707495	0.685636	0.686782	0.684768	0.96173 Randomize
Gradient Bc W400_O50 80/20	0.753633	0.743034	0.742754	0.742037	0.967323 Randomize
Gradient Bc W400_O50 70/30	0.746771	0.737979	0.7324	0.733356	0.965483 Randomize
Gradient Bc W500_O0 80/20	0.682131	0.673841	0.679204	0.673668	0.952978 Randomize
Gradient Bc W500_O0 70/30	0.691867	0.683623	0.680211	0.678412	0.95847 Randomize
Gradient Bc W500_O50 80/20	0.752829	0.744184	0.737572	0.739272	0.970254 Randomize
Gradient Bc W500_O50 70/30	0.75348	0.736414	0.734029	0.733423	0.967899 Randomize
XGBoost W100_O0 80/20	0.674899	0.674376	0.658013	0.659044	0.952236 Randomize
XGBoost W100_O0 70/30	0.688698	0.680474	0.670367	0.670073	0.952775 Randomize
XGBoost W100_O50 80/20	0.699102	0.698916	0.685588	0.68519	0.956906 Randomize
XGBoost W100_O50 70/30	0.69861	0.694801	0.683765	0.683285	0.957772 Randomize
XGBoost W200_O0 80/20	0.724677	0.719415	0.700434	0.702453	0.965179 Randomize
XGBoost W200_O0 70/30	0.723607	0.713369	0.70154	0.701511	0.961307 Randomize
XGBoost W200_O50 80/20	0.733788	0.730295	0.712874	0.71571	0.963772 Randomize
XGBoost W200_O50 70/30	0.741524	0.738533	0.721407	0.722506	0.965897 Randomize
XGBoost W300_O0 80/20	0.721597	0.717258	0.707093	0.708814	0.961679 Randomize
XGBoost W300_O0 70/30	0.727645	0.72211	0.707288	0.710044	0.964442 Randomize
XGBoost W300_O50 80/20	0.782071	0.786694	0.777202	0.779009	0.977458 Randomize
XGBoost W300_O50 70/30		0.765559	0.758105	0.758774	0.974535 Randomize
XGBoost W400_O0 80/20	0.739369	0.727845	0.731898	0.725741	0.968461 Randomize
XGBoost W400_O0 70/30		0.730405	0.728657	0.728347	0.970098 Randomize
XGBoost W400_O50 80/20	0.797232	0.786164	0.781773	0.782369	0.979489 Randomize
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XGBoost	W400_O50 70/30	0.793358	0.782457	0.777234	0.777867	0.978026 Randomize
XGBoost	W500_O0 80/20	0.723368	0.721724	0.726093	0.720183	0.962776 Randomize
XGBoost	W500_O0 70/30	0.74685	0.743343	0.733648	0.732029	0.969056 Randomize
XGBoost	W500_O50 80/20	0.798956	0.801435	0.780062	0.786241	0.980837 Randomize
XGBoost	W500_O50 70/30	0.800464	0.793267	0.781691	0.783795	0.980686 Randomize
ANN	W100_O0 80/20	0.661028	0.660558	0.649544	0.652217	0.948425 Randomize
ANN	W100_O0 70/30	0.66411	0.660425	0.655549	0.655371	0.949926 Randomize
ANN	W100_O50 80/20	0.707747	0.706934	0.697356	0.698488	0.962466 Randomize
ANN	W100_O50 70/30	0.719177	0.716829	0.706017	0.708445	0.962371 Randomize
ANN	W200_O0 80/20	0.690687	0.697004	0.677684	0.682706	0.959959 Randomize
ANN	W200_O0 70/30	0.674671	0.674063	0.661058	0.663861	0.953019 Randomize
ANN	W200_O50 80/20	0.722184	0.717855	0.70695	0.708745	0.962389 Randomize
ANN	W200_O50 70/30	0.722412	0.717177	0.712429	0.711893	0.962095 Randomize
ANN	W300_O0 80/20	0.69089	0.685208	0.68138	0.681093	0.959322 Randomize
ANN	W300_O0 70/30	0.662116	0.678456	0.652659	0.648496	0.954669 Randomize
ANN	W300_O50 80/20	0.781041	0.771744	0.76925	0.769648	0.975261 Randomize
ANN	W300_O50 70/30	0.741415	0.739178	0.727944	0.72855	0.96899 Randomize
ANN	W400_O0 80/20	0.679012	0.675686	0.665157	0.66612	0.958858 Randomize
ANN	W400_O0 70/30	0.706581	0.699479	0.699528	0.697873	0.963292 Randomize
ANN	W400_O50 80/20	0.729412	0.724317	0.706081	0.709512	0.968182 Randomize
ANN	W400_O50 70/30	0.74262	0.736194	0.730341	0.729933	0.969956 Randomize
ANN	W500_O0 80/20	0.668385	0.688187	0.670282	0.673724	0.96084 Randomize
ANN	W500_O0 70/30	0.66323	0.679274	0.645444	0.652246	0.956576 Randomize
ANN	W500_O50 80/20	0.73107	0.732742	0.717859	0.722573	0.971279 Randomize
ANN	W500_O50 70/30	0.713457	0.718621	0.692861	0.698338	0.966702 Randomize

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## Best\_Param\_Notes

Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. Tested C in [0.01, 0.1, 1, 10, 100], penalty in ['l1', 'l2'], using GridSearchCV with Stratified 5-fold CV. 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Tested n estimators in [50, 100, 200], learning rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold
```

Tested n estimators in [50, 100, 200], learning rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n\_estimators in [50, 100, 200], learning\_rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n\_estimators in [50, 100, 200], learning\_rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n estimators in [50, 100, 200], learning rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n estimators in [50, 100, 200], learning rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n\_estimators in [50, 100, 200], learning\_rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n\_estimators in [50, 100, 200], learning\_rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n\_estimators in [50, 100, 200], learning\_rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested n estimators in [50, 100, 200], learning rate in [0.01, 0.1, 1], using RandomizedSearchCV with 3-fold Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning rate in [0.01, 0.1, 0.2], max depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested learning\_rate in [0.01, 0.1, 0.2], max\_depth in [3, 5, 7], using RandomizedSearchCV with Stratified 3-f Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV

Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n\_estimators, learning\_rate, max\_depth, subsample, colsample\_bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested n estimators, learning rate, max depth, subsample, colsample bytree using RandomizedSearchCV Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden layer sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV. Tested hidden\_layer\_sizes, solver, and activation using RandomizedSearchCV with Stratified 3-fold CV.

with 2-fold Stratified CV and confirmed with KFold-5F. with 2-fold Stratified CV and confirmed with KFold-5F.

with 2-fold Stratified CV and confirmed with KFold-5F. with 2-fold Stratified CV and confirmed with KFold-5F. with 2-fold Stratified CV and confirmed with KFold-5F. with 2-fold Stratified CV and confirmed with KFold-5F. with 2-fold Stratified CV and confirmed with KFold-5F.