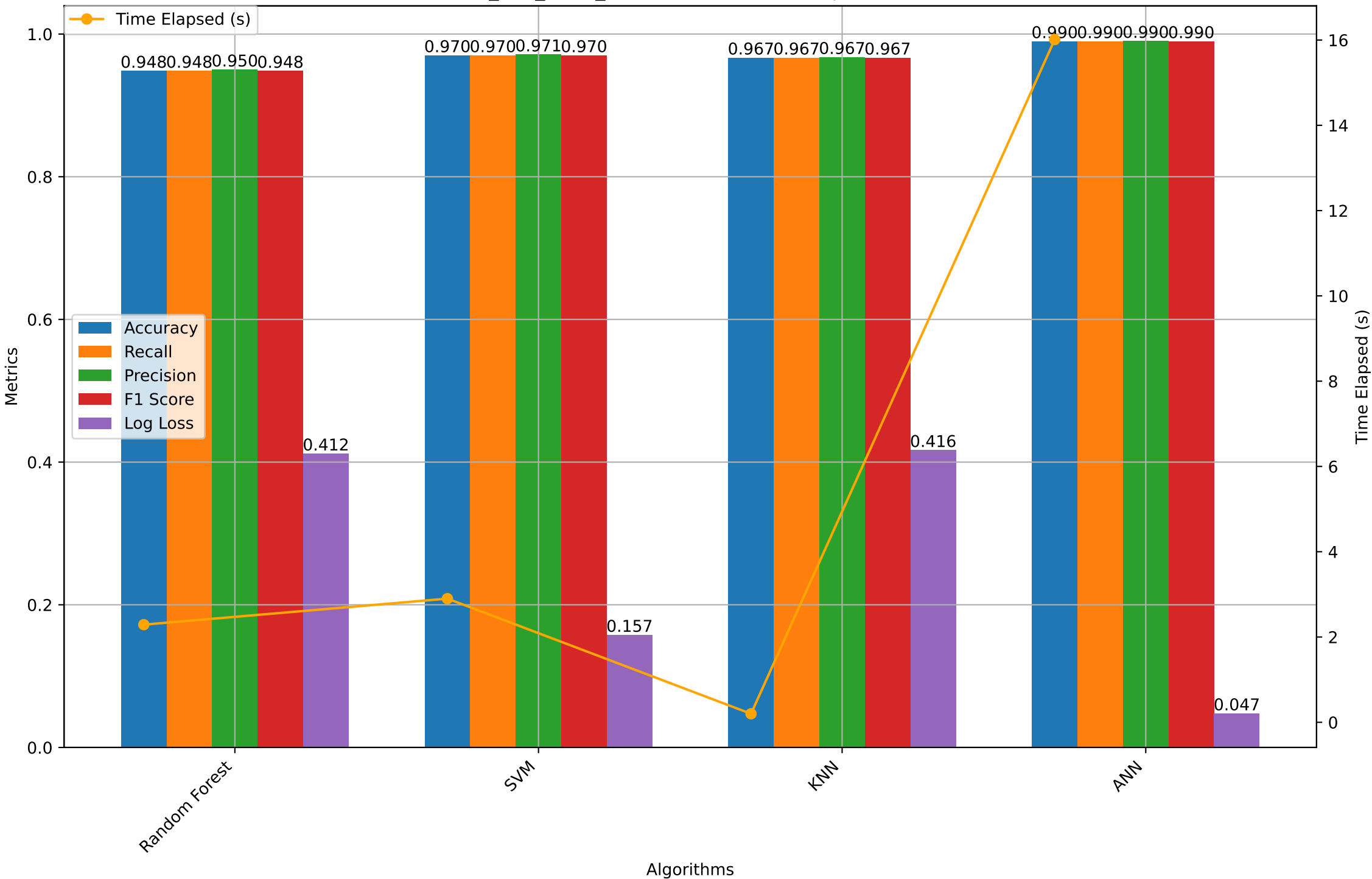
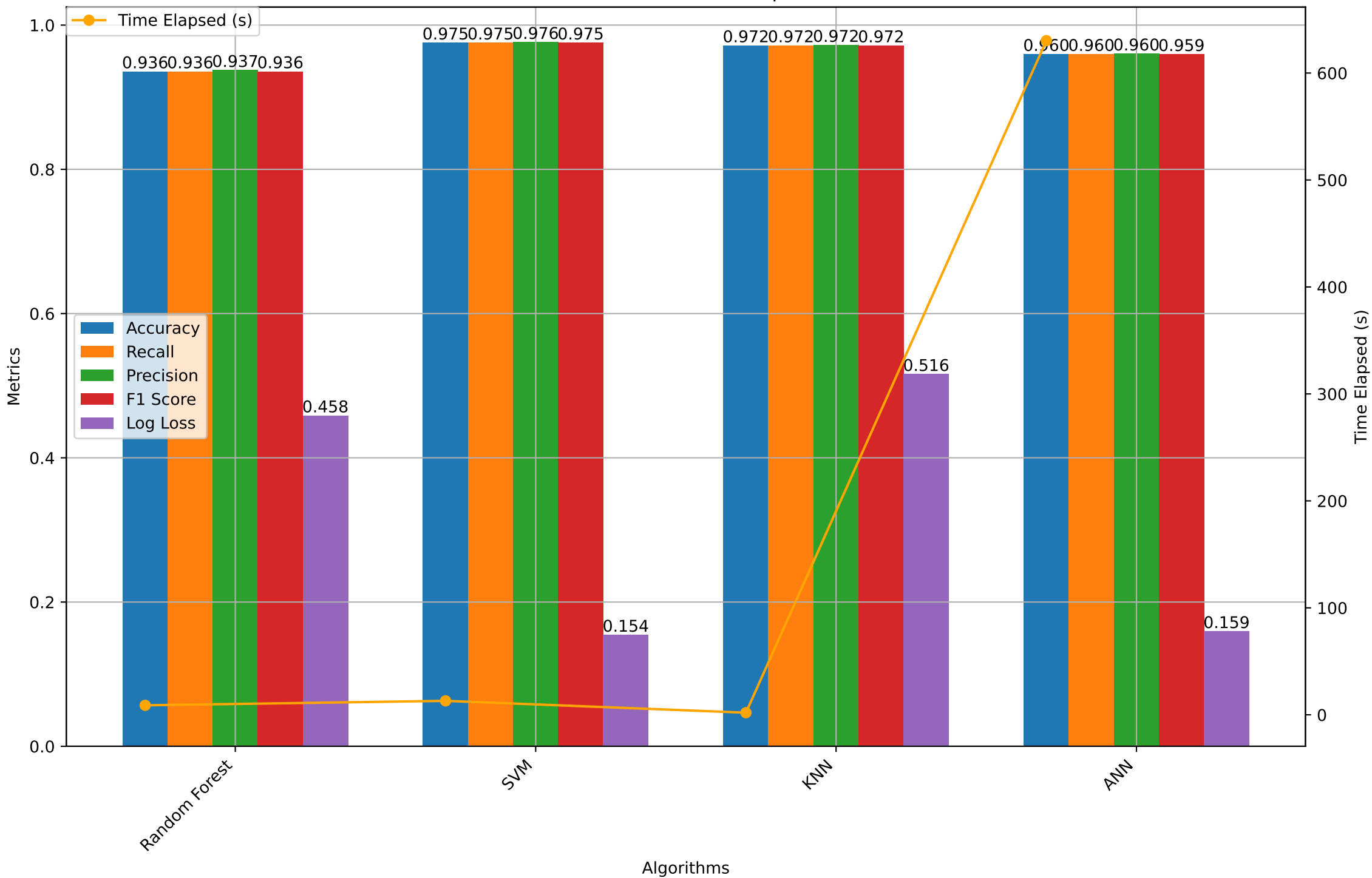


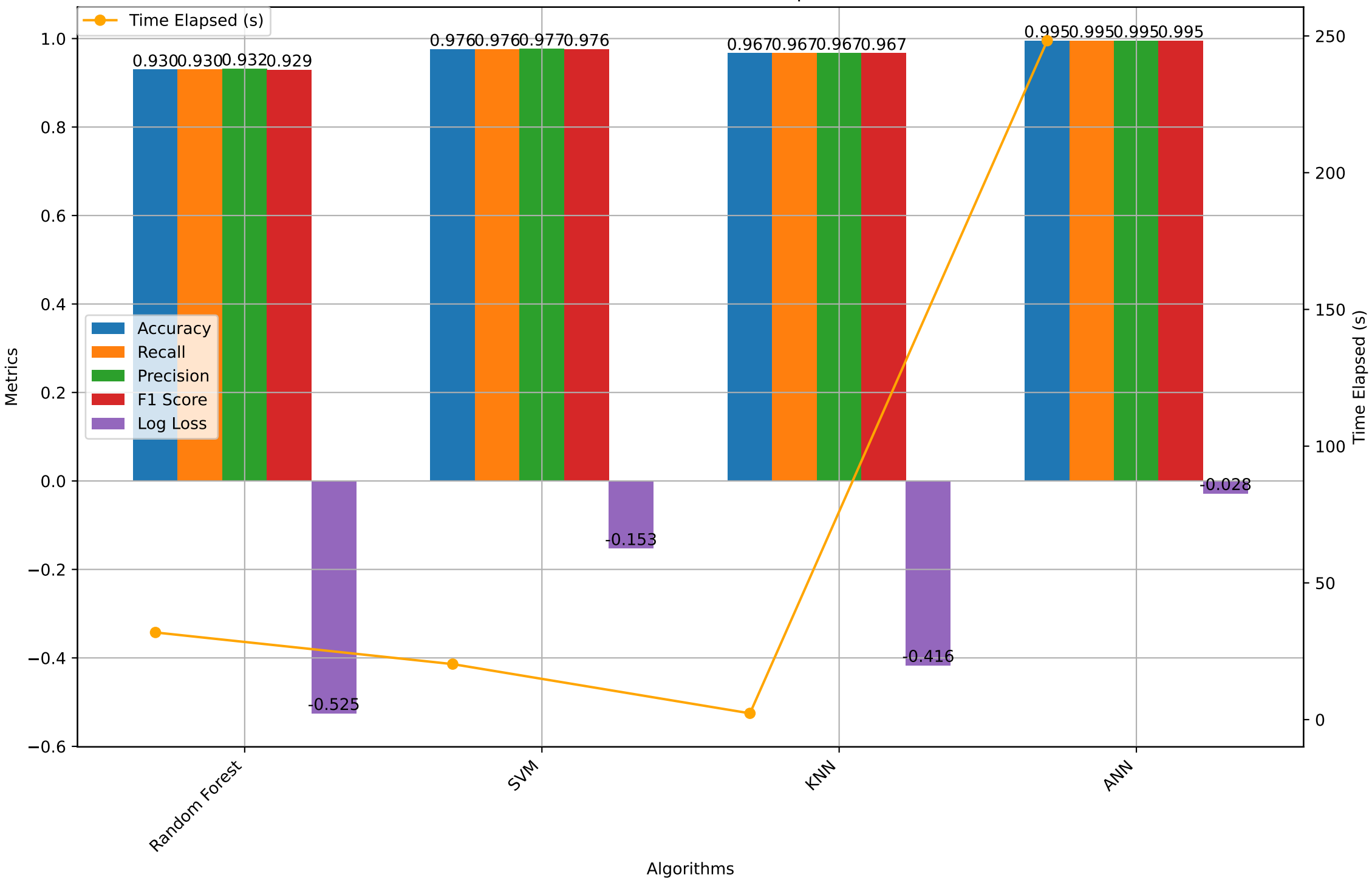
# 3\_fold\_cross\_validation - Metric Comparison



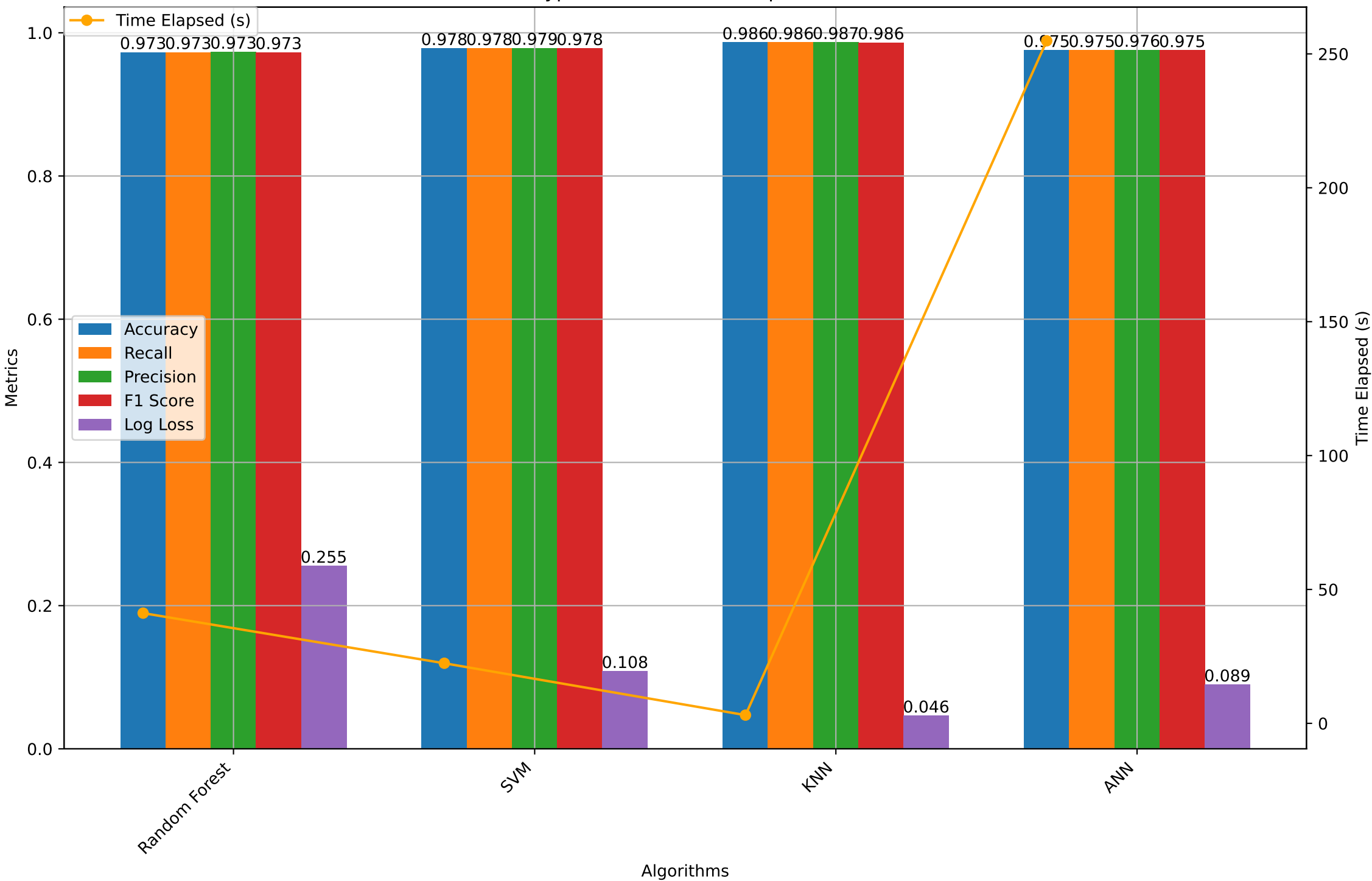
Grid Search - Metric Comparison



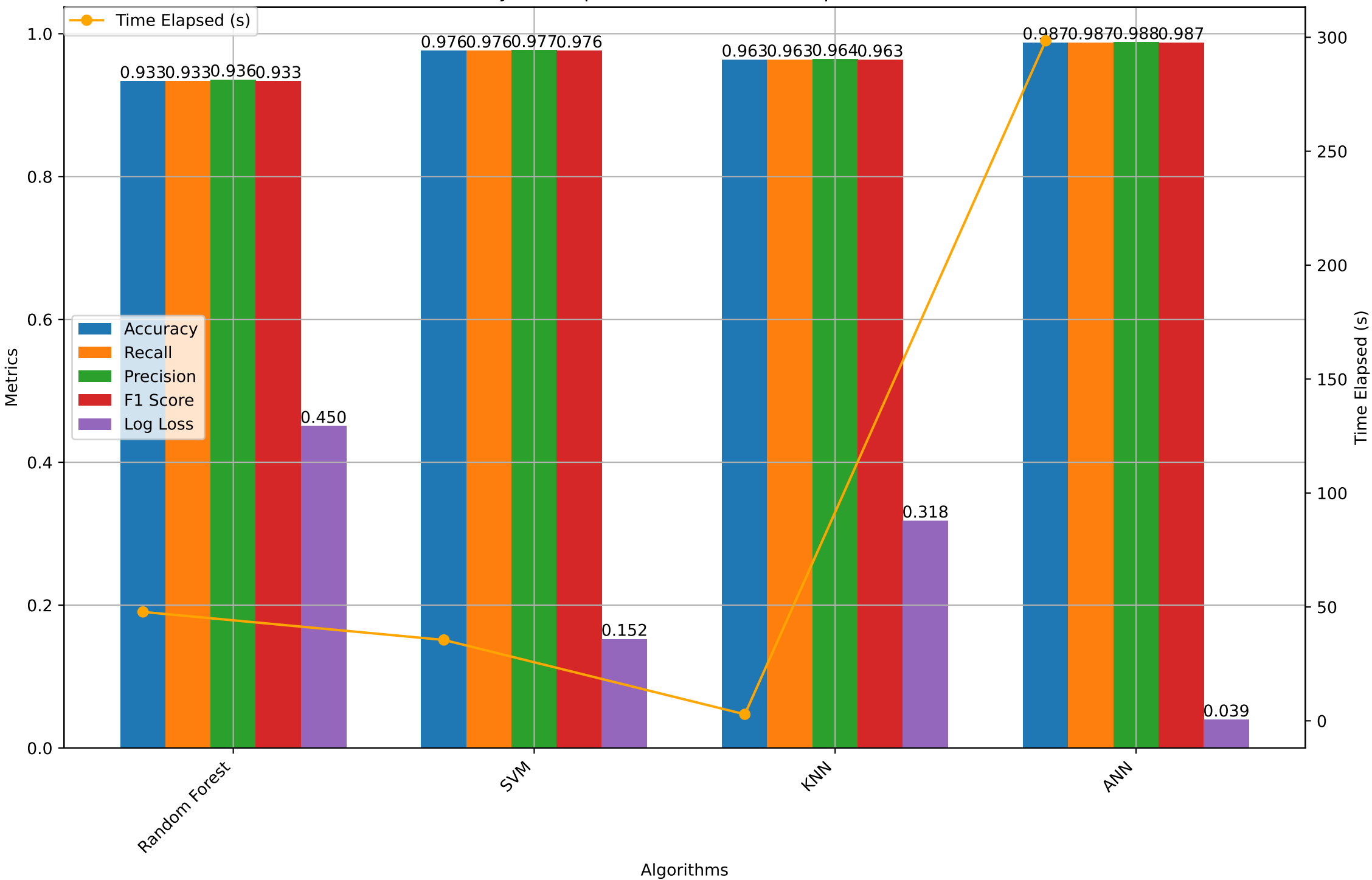
# Random Search - Metric Comparison



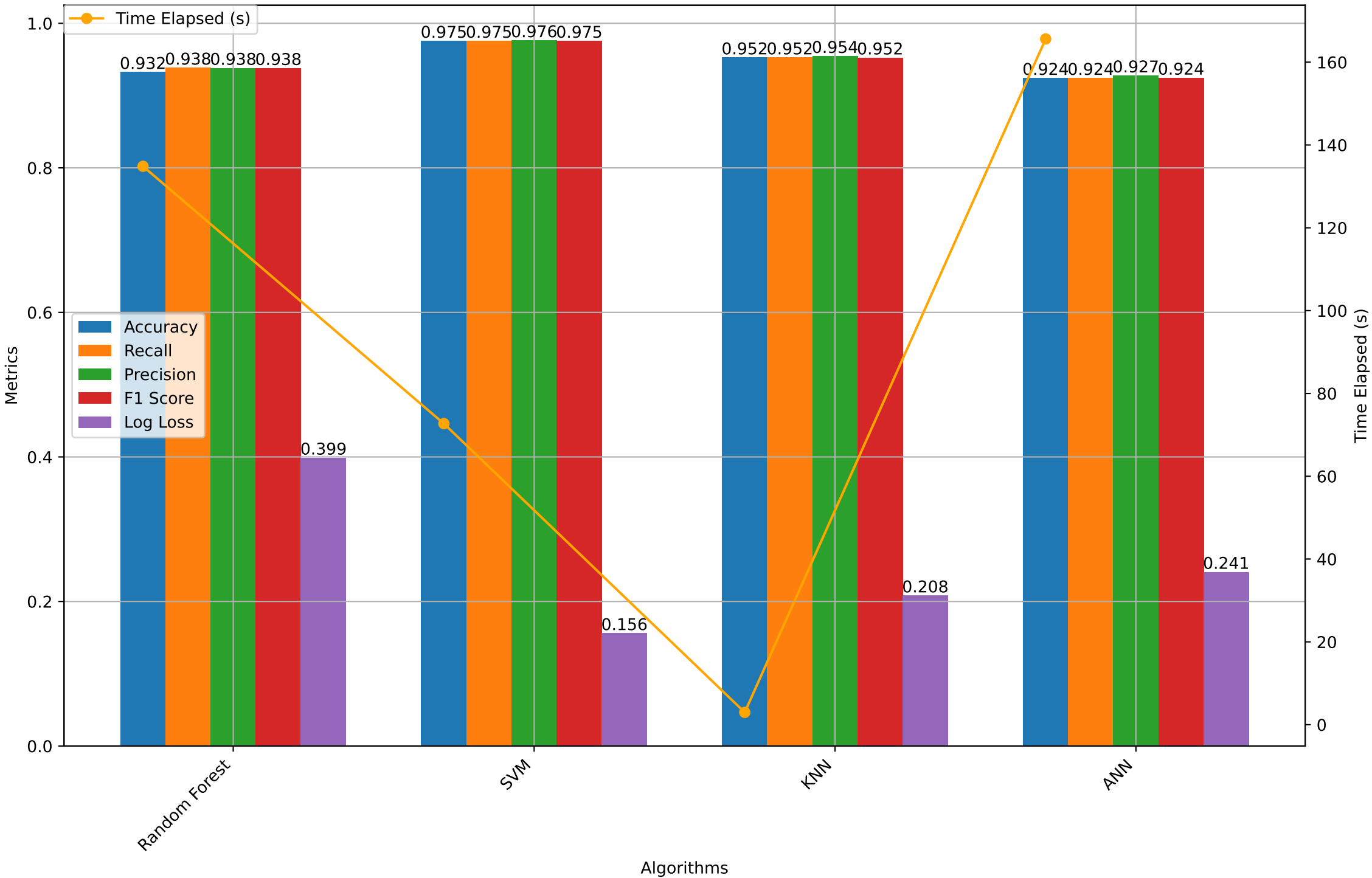
Hyperband - Metric Comparison



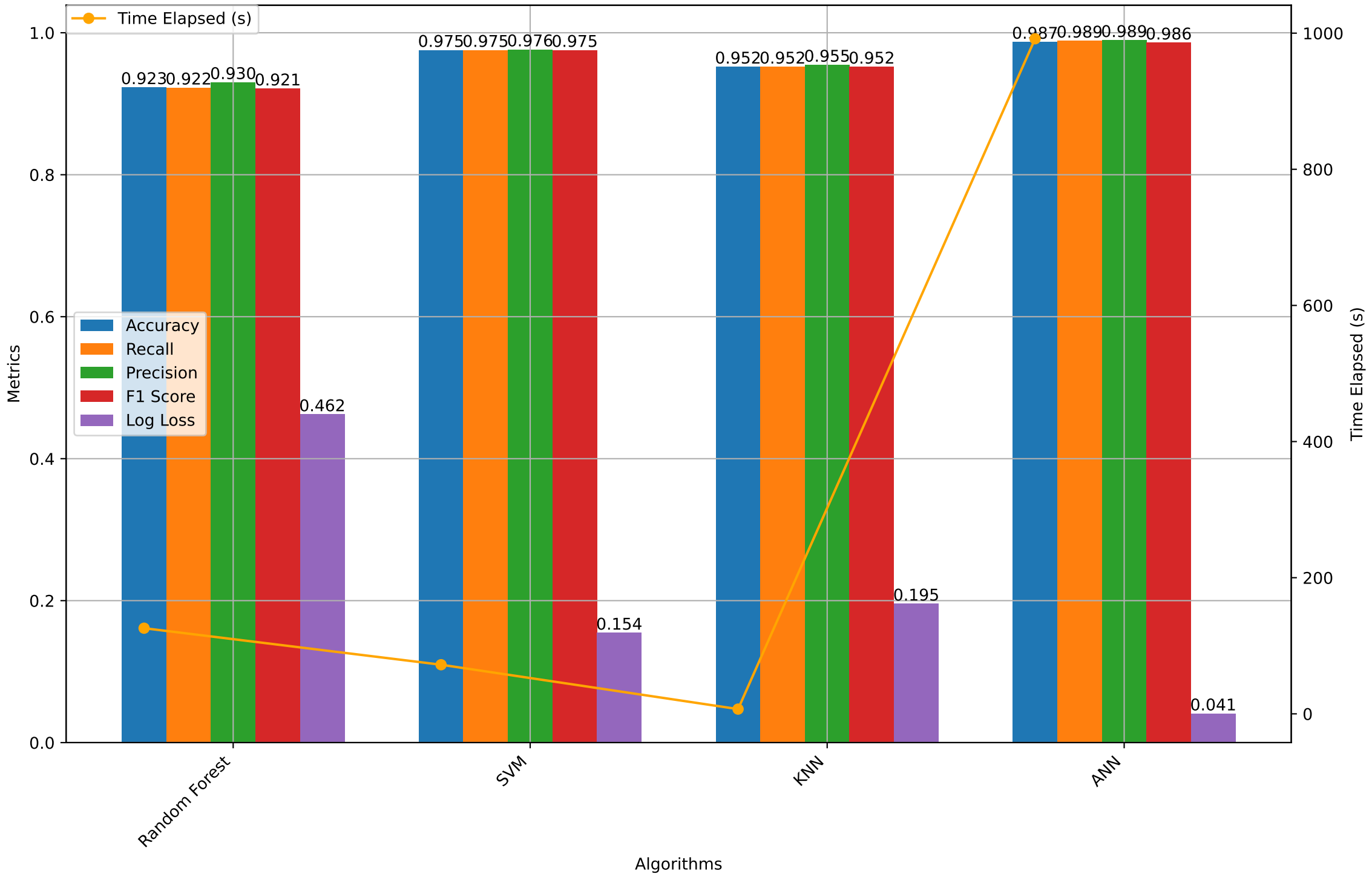
# Bayesian Optimization - Metric Comparison



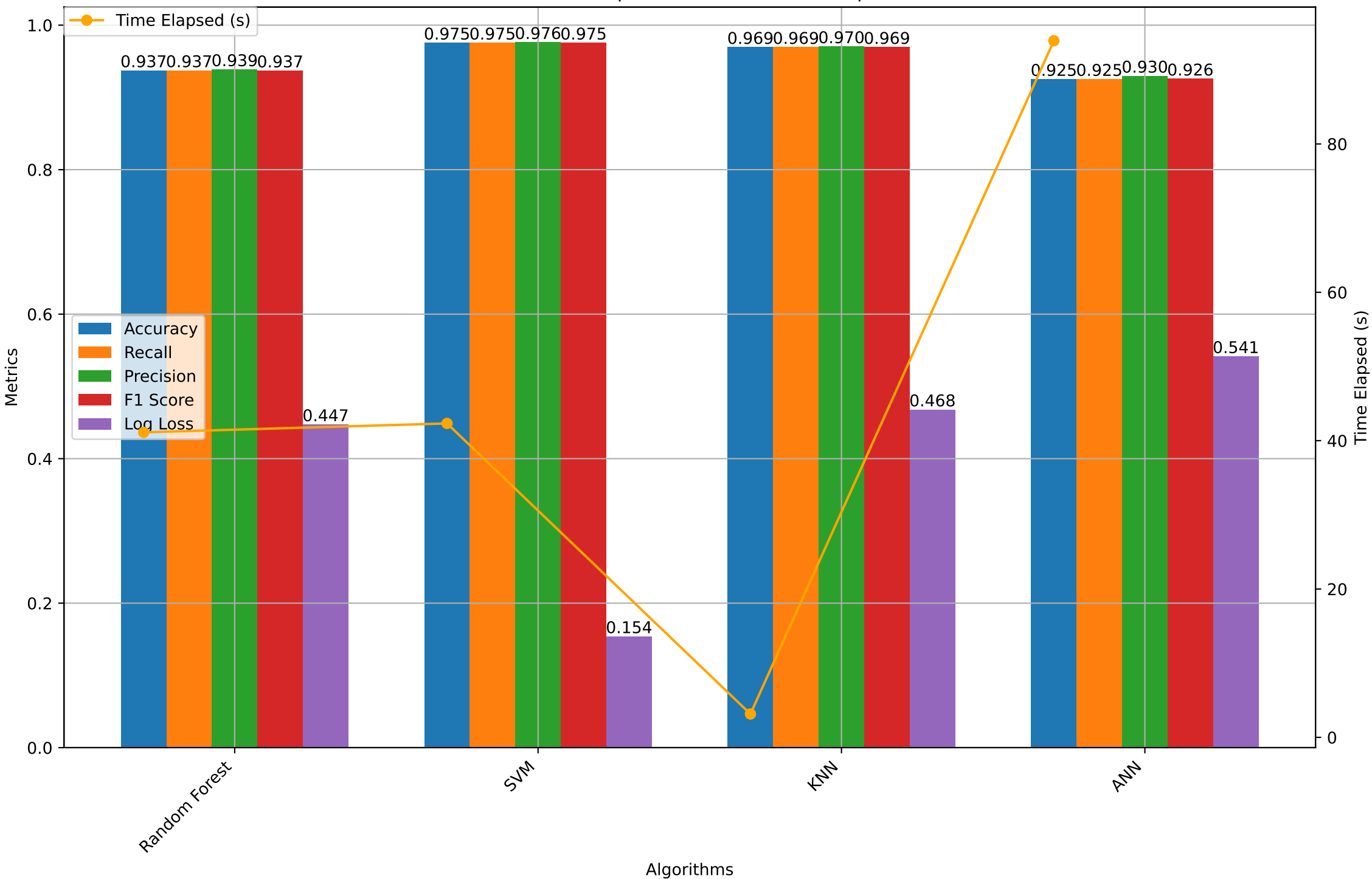
# Sequential Model-Based Optimization (skopt) - Metric Comparison



Bayesian Optimization (scikit-optimize) - Metric Comparison

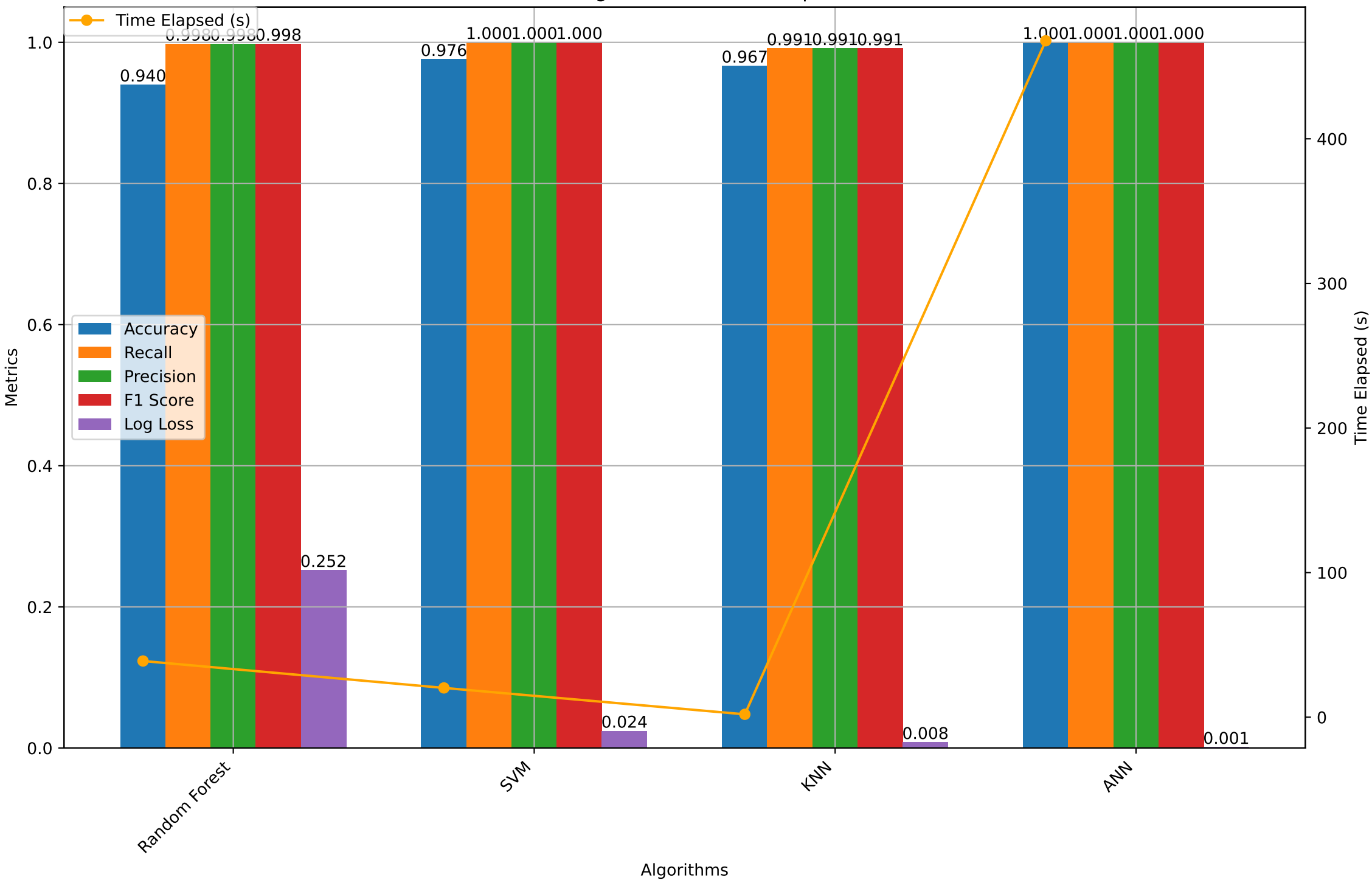


# Particle Swarm Optimization - Metric Comparison

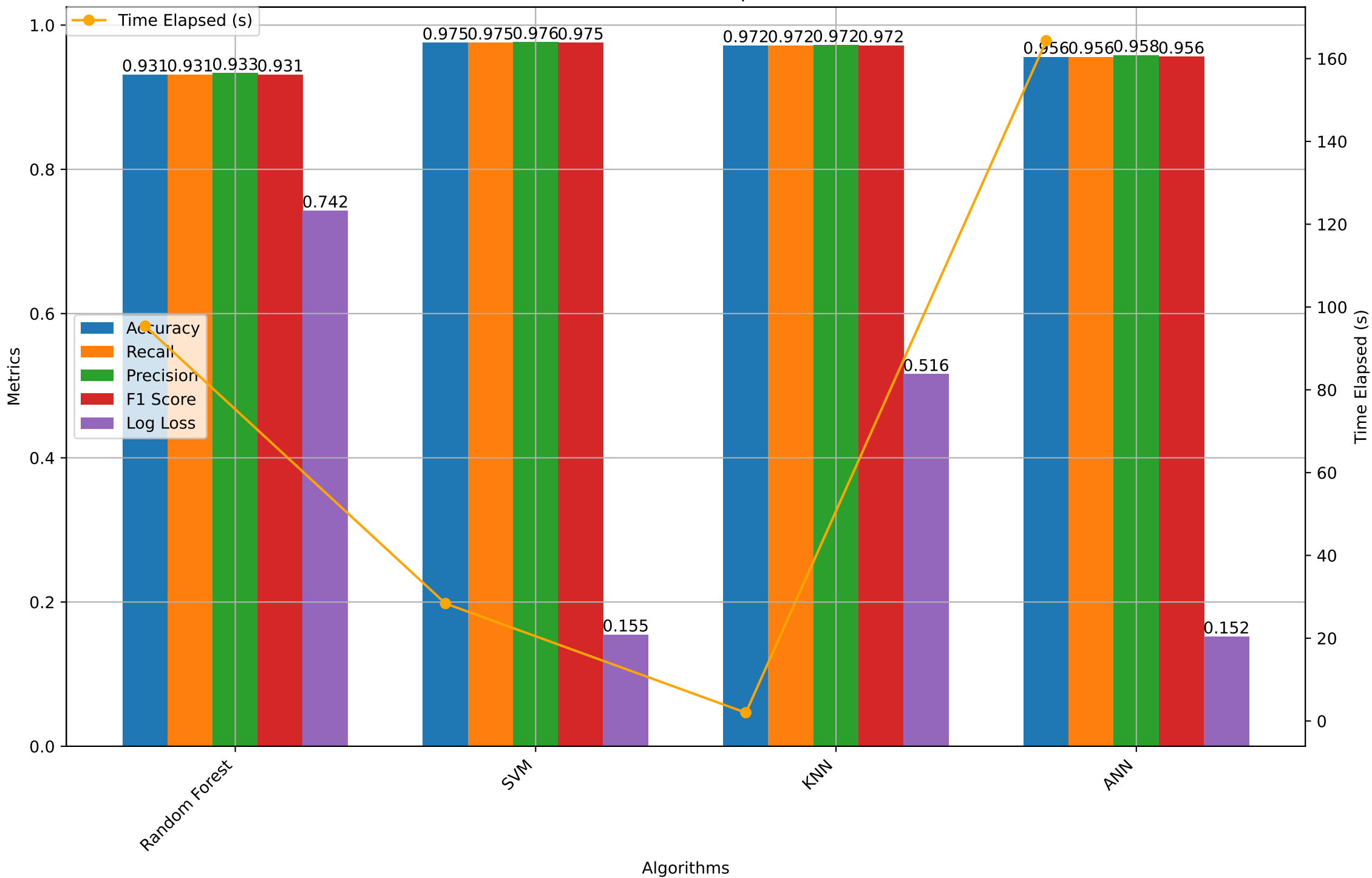




Genetic Algorithm - Metric Comparison



TPOT - Metric Comparison



Best Algorithm and Procedure Summary:

Procedure	Accuracy Winner	Recall Winner	Precision Winner	F1 Score Winner	Log Loss Winner	Accuracy Value	Recall Value	Precision Value	F1 Score Value	Log Loss Value	Time Winner	Time Elapsed (s)
3_fold_cross_validation	ANN	ANN	ANN	ANN	ANN	0.9896174863387978	0.989617486338798	0.98997642105505	0.9896310737214454	0.0473886151562324	KNN	0.2
Grid Search	SVM	SVM	SVM	SVM	SVM	0.9754098360655736	0.9754098360655736	0.9761705255402868	0.9754125552974512	0.1542585710597353	KNN	1.98
Random Search	ANN	ANN	ANN	ANN	Random Forest	0.9950819672131148	0.9950819672131148	0.9951339958981418	0.9950816385433742	-0.5252943549831846	KNN	2.3
Hyperband	KNN	KNN	KNN	KNN	KNN	0.9863387978142076	0.9863387978142076	0.9865397213434316	0.9862973641586829	0.0460381887811219	KNN	3.069052457809448
Bayesian Optimization	ANN	ANN	ANN	ANN	ANN	0.9874316939890712	0.987431693989071	0.9878693641874956	0.9874267764135882	0.0393735942741495	KNN	2.87
Sequential Model-Based Optimization (skopt)	SVM	SVM	SVM	SVM	SVM	0.9754098360655736	0.9754098360655736	0.9761705255402868	0.9754125552974512	0.1557513436088586	KNN	2.976971387863159
Bayesian Optimization (scikit-optimize)	ANN	ANN	ANN	ANN	ANN	0.9868852459016394	0.9885245901639346	0.9892774986038488	0.9858439993926068	0.0406862071228365	KNN	6.96
Particle Swarm Optimization	SVM	SVM	SVM	SVM	SVM	0.9754098360655736	0.9754098360655736	0.976170525540287	0.9754125552974512	0.153833737283071	KNN	3.15
Genetic Algorithm	ANN	SVM	SVM	SVM	ANN	1.0	1.0	1.0	1.0	0.0010811978403457	KNN	1.98
TPOT	SVM	SVM	SVM	SVM	ANN	0.9754098360655736	0.9754098360655736	0.976170525540287	0.9754125552974512	0.1518086793316699	KNN	2.01

Overall Best Algorithm and Procedure:

Procedure	Accuracy Winner	Recall Winner	Precision Winner	F1 Score Winner	Log Loss Winner	Accuracy Value	Recall Value	Precision Value	F1 Score Value	Log Loss Value	Time Winner	Time Elapsed (s)
Genetic Algorithm	ANN	SVM	SVM	SVM	ANN	1.0	1.0	1.0	1.0	0.0010811978403457	KNN	1.98