MAE Comparison by Model - Regression

CapyMOA
River

MAE (average)

Models (left to right): ShrubsRegressor, StreamingGradientBoostedRegression, ARFFIMTDD, KNNRegressor, SOKNLBT, TargetMean, [baseline] Mean predictor, FadingTargetMean, NoChange, SOKNL, AdaptiveRandomForestRegressor, PassiveAggressiveRegressor, FIMTDD, ORTO, SGDRegressor, Adaptive Model Rules, Adaptive Random Forest, Aggregated Mondrian Forest, Bagging, Exponentially Weighted Average, Hoeffding Adaptive Tree, Hoeffding Tree, Linear Regression, Linear Regression with l1 regularization, Linear Regression with l2 regularization, Passive-Aggressive Regressor, mode 1, Passive-Aggressive Regressor, mode 2, River MLP, Stochastic Gradient Tree, Streaming Random Patches, k-Nearest Neighbors

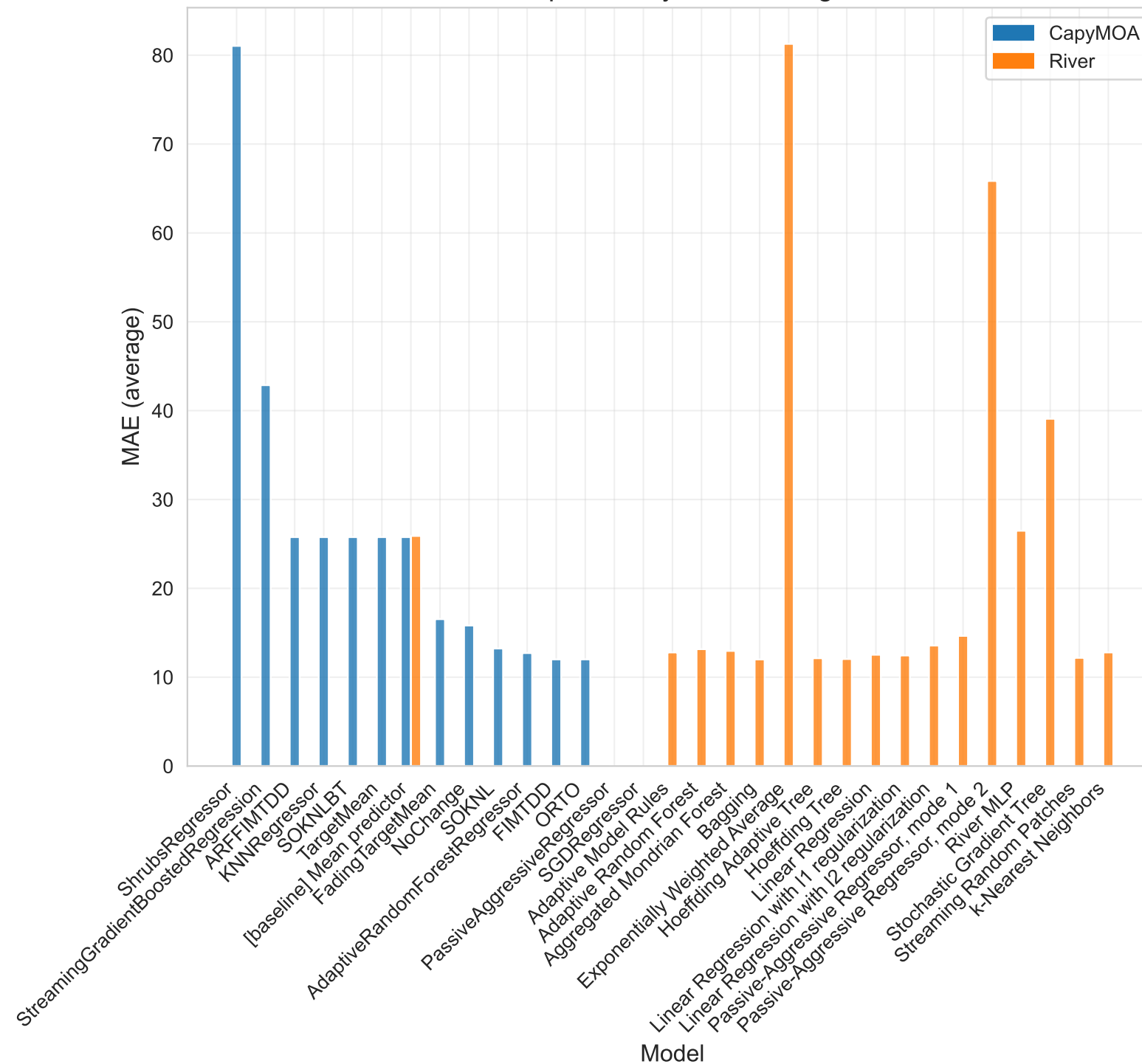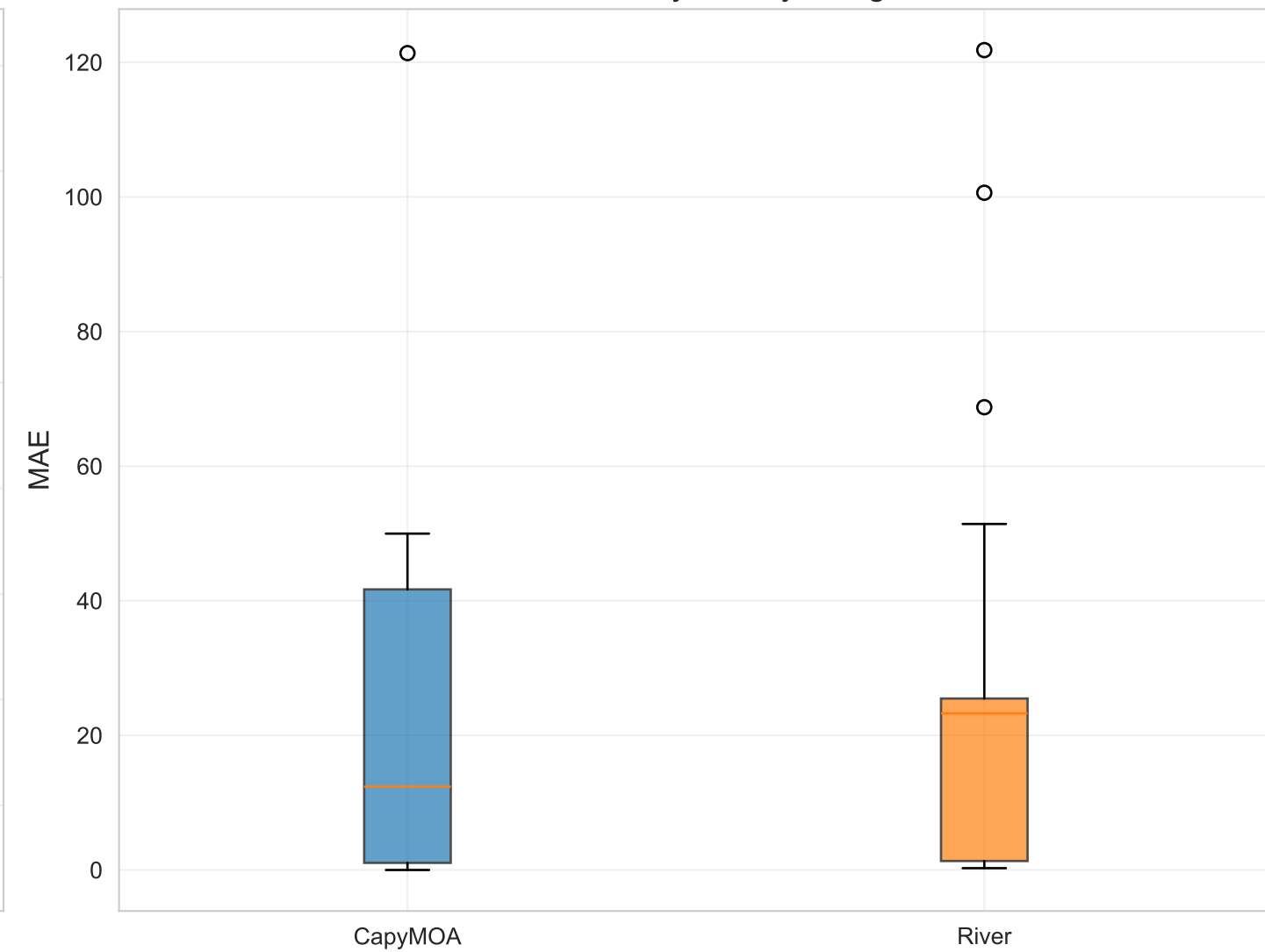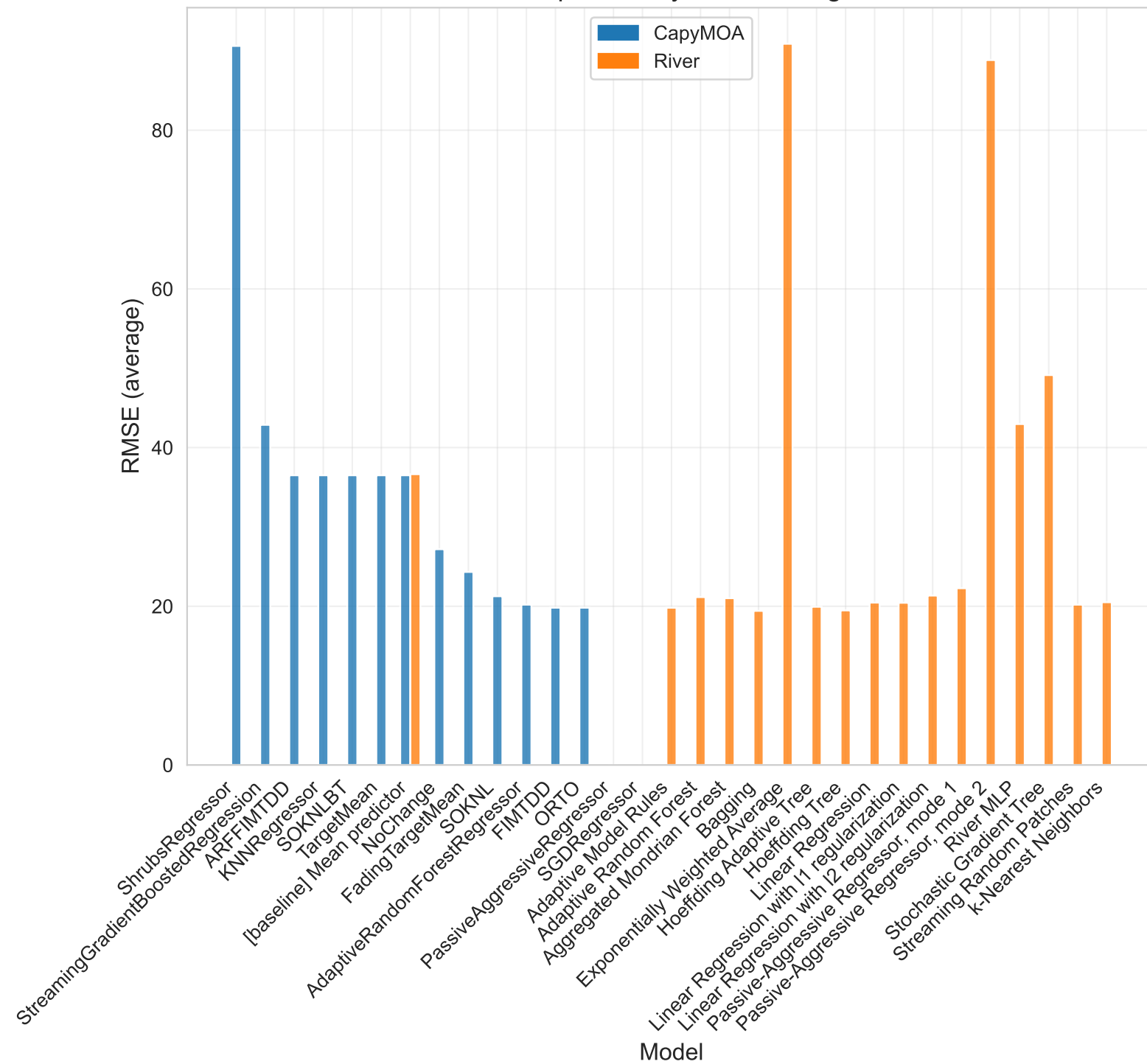**MAE Distribution by Library - Regression**
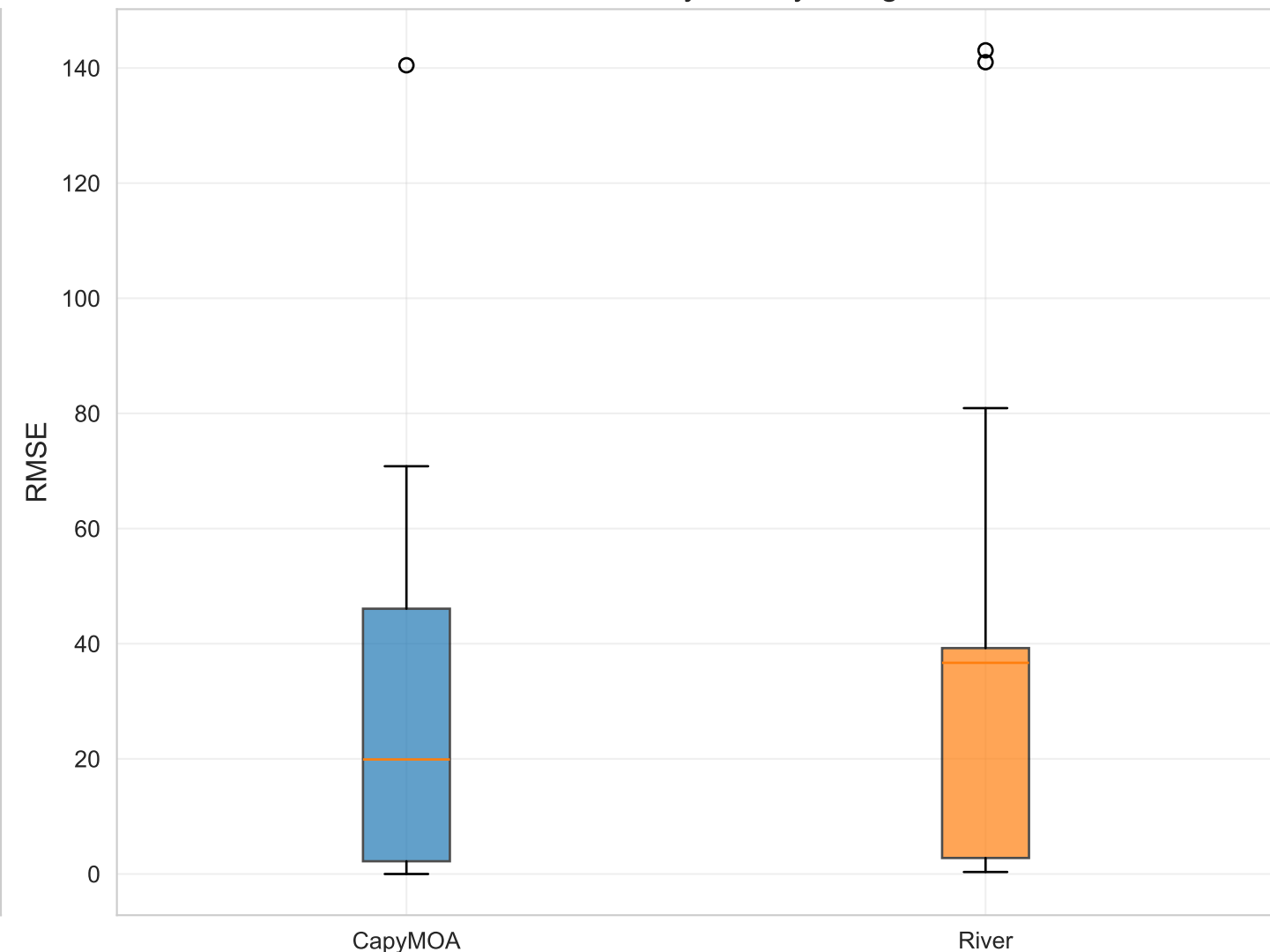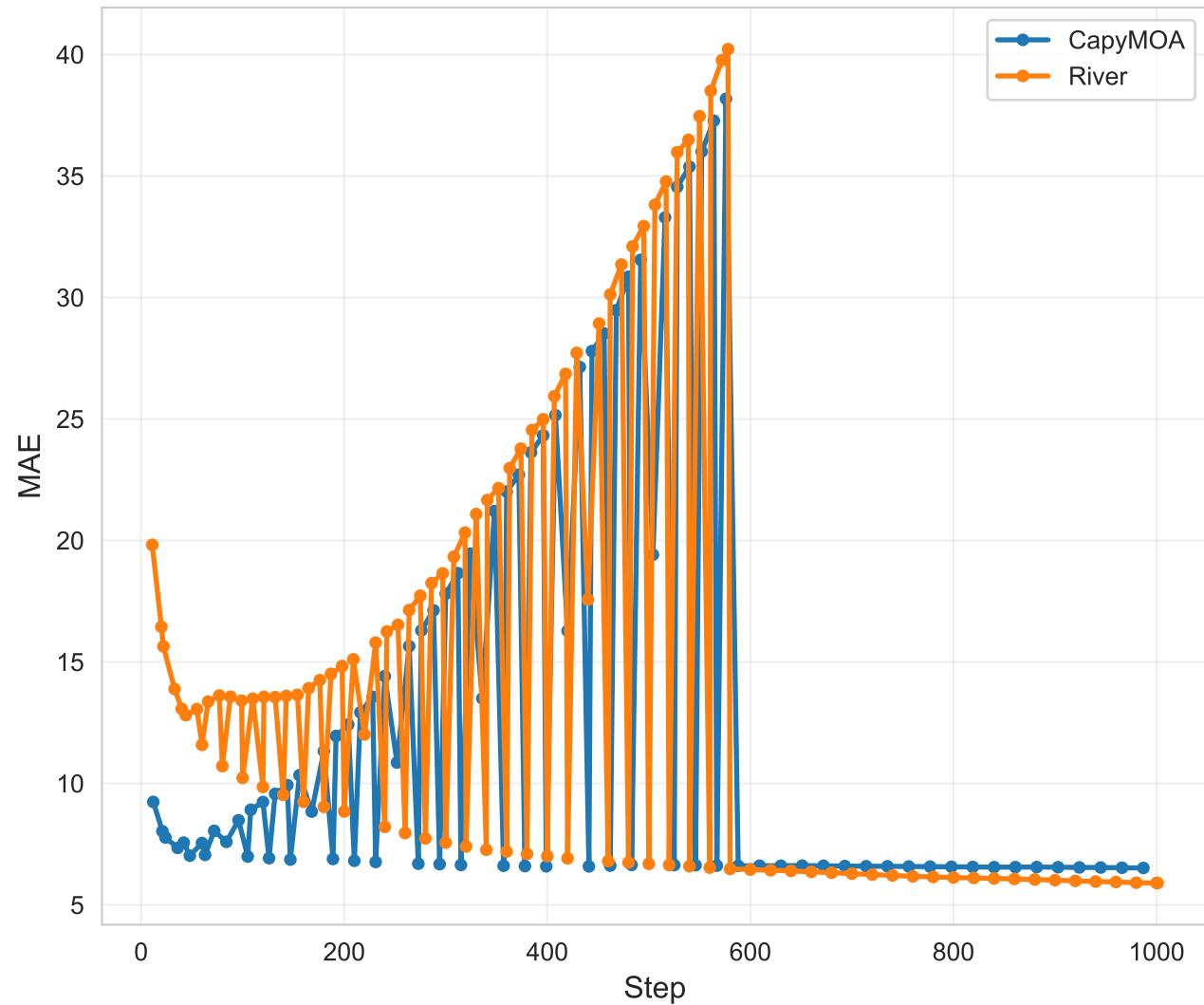
MAE

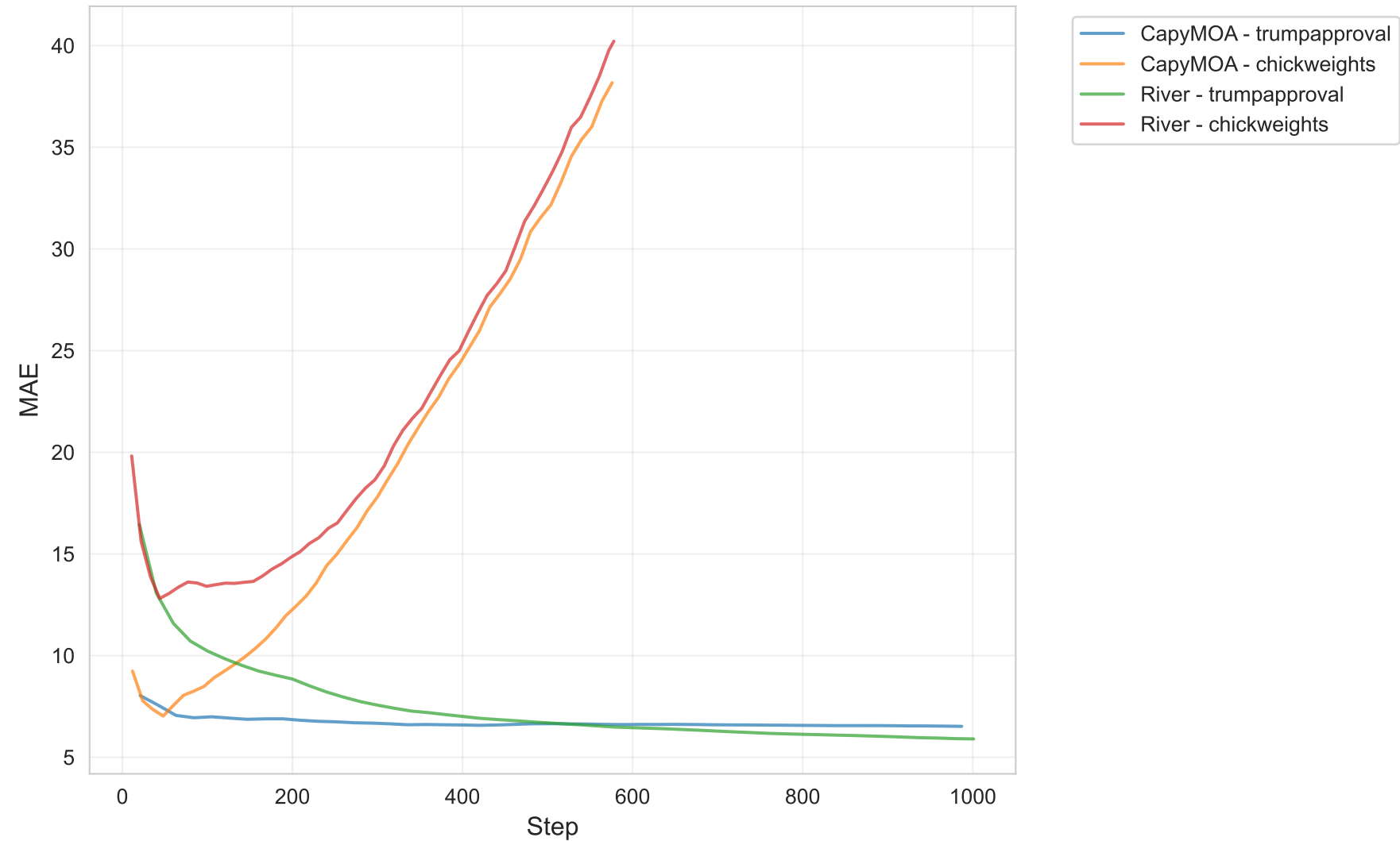CapyMOA, River

RMSE Comparison by Model - Regression
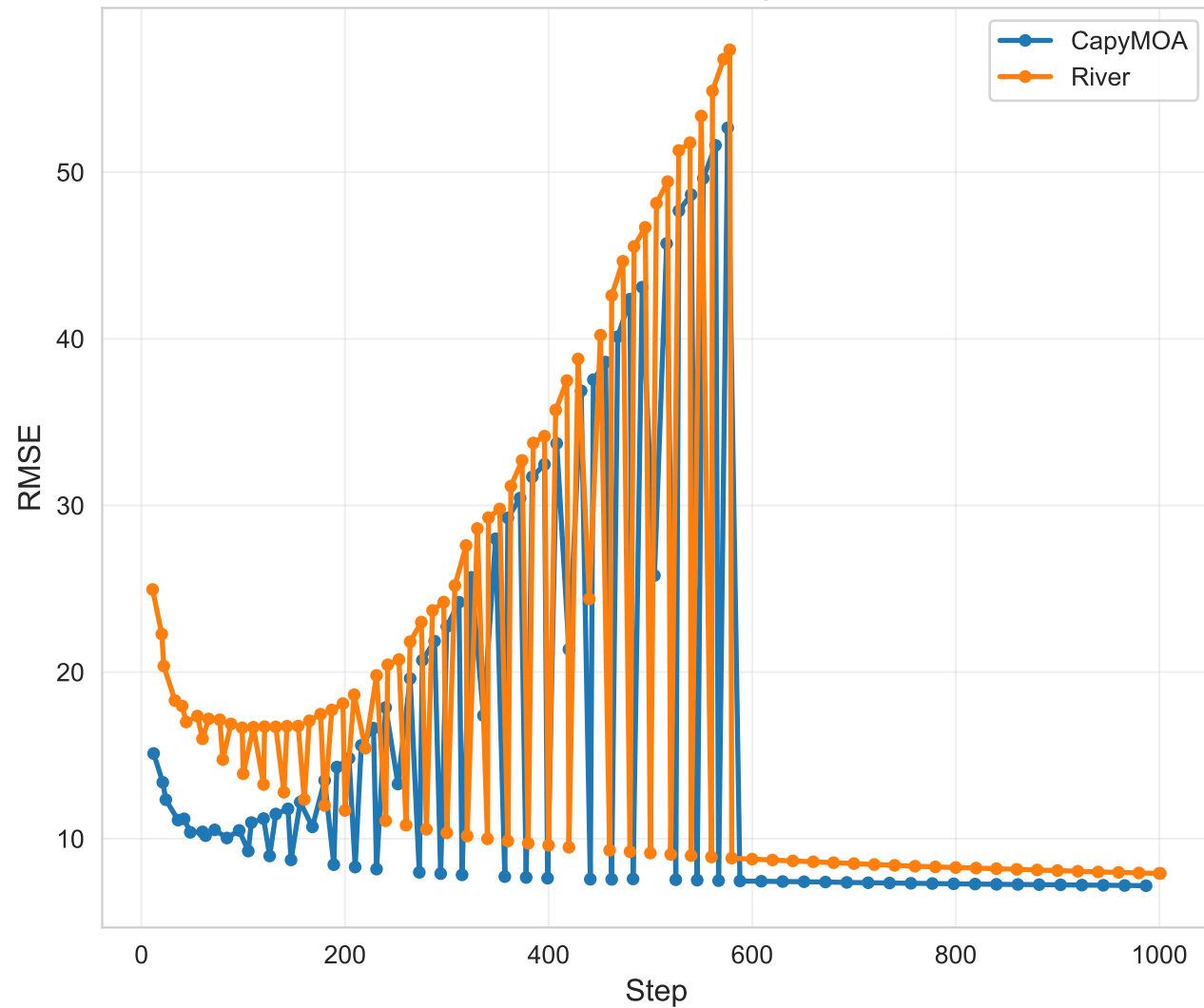
RMSE Distribution by Library - Regression

MAE Evolution - Regression | MAE Evolution by Dataset - Regression

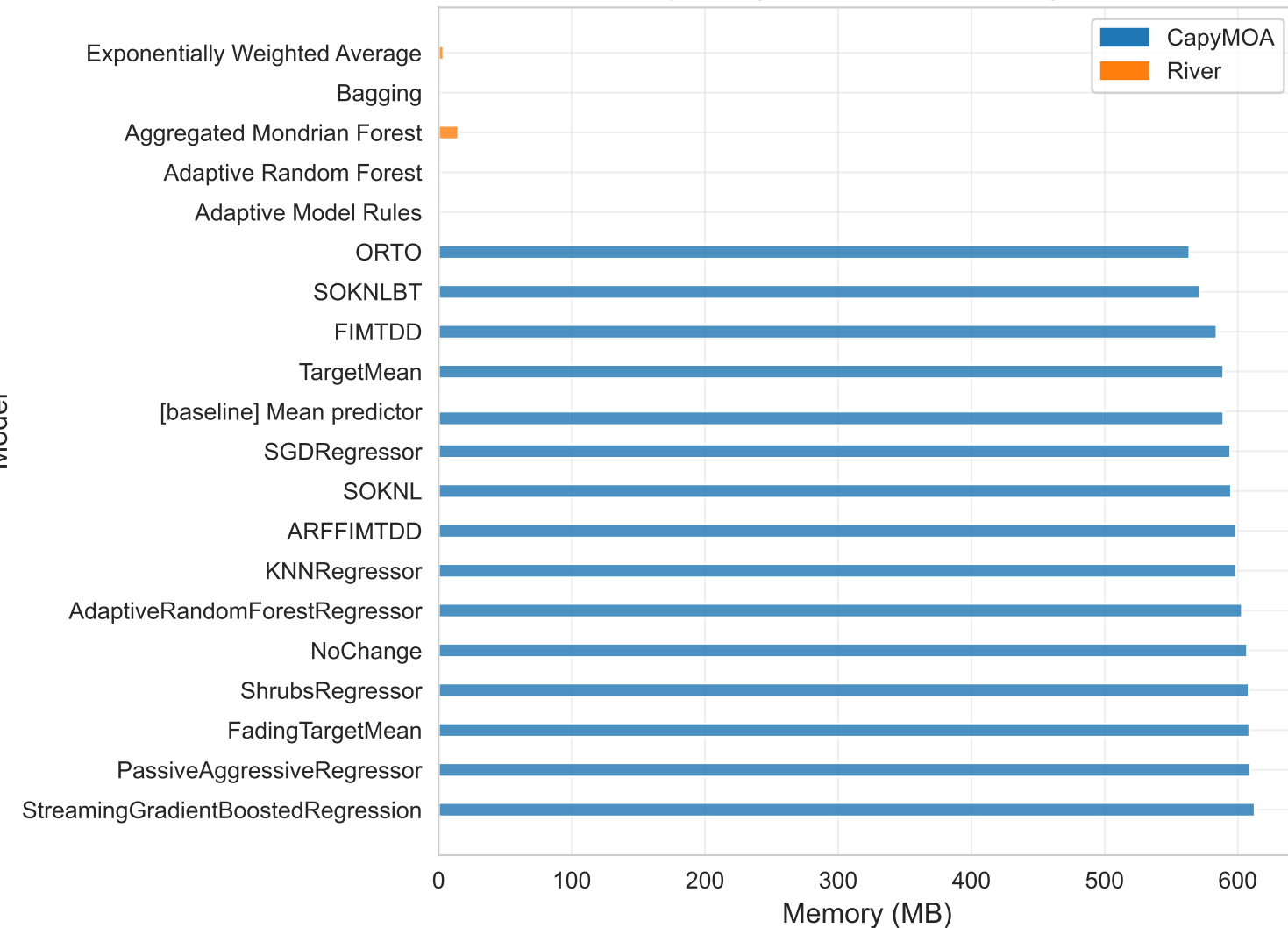**RMSE Evolution - Regression** (left) and **RMSE Evolution by Dataset - Regression** (right)

Left plot legend:
- CapyMOA
- River

Right plot legend:
- CapyMOA - trumpapproval
- CapyMOA - chickweights
- River - trumpapproval
- River - chickweights
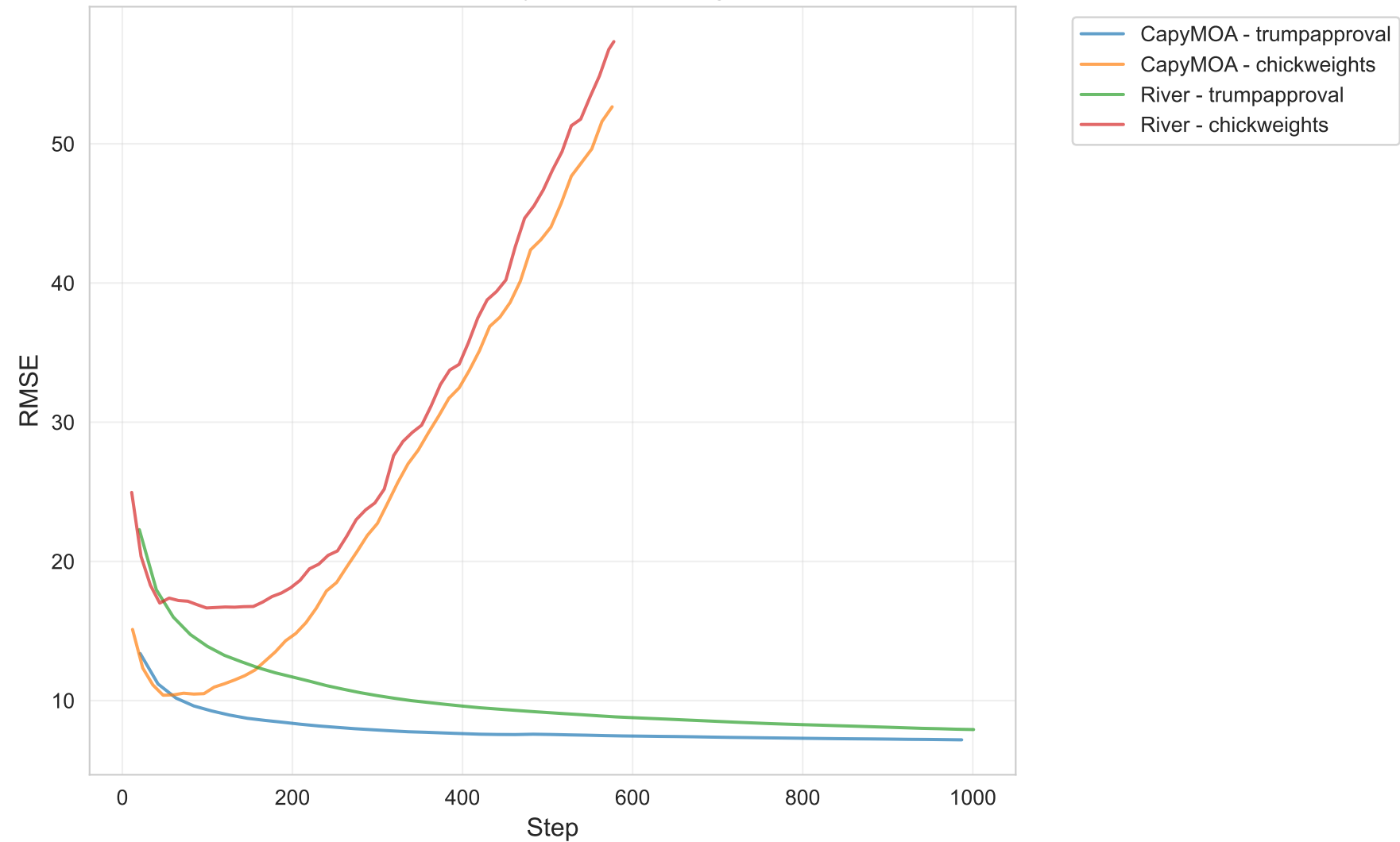
Execution Time Comparison - Regression
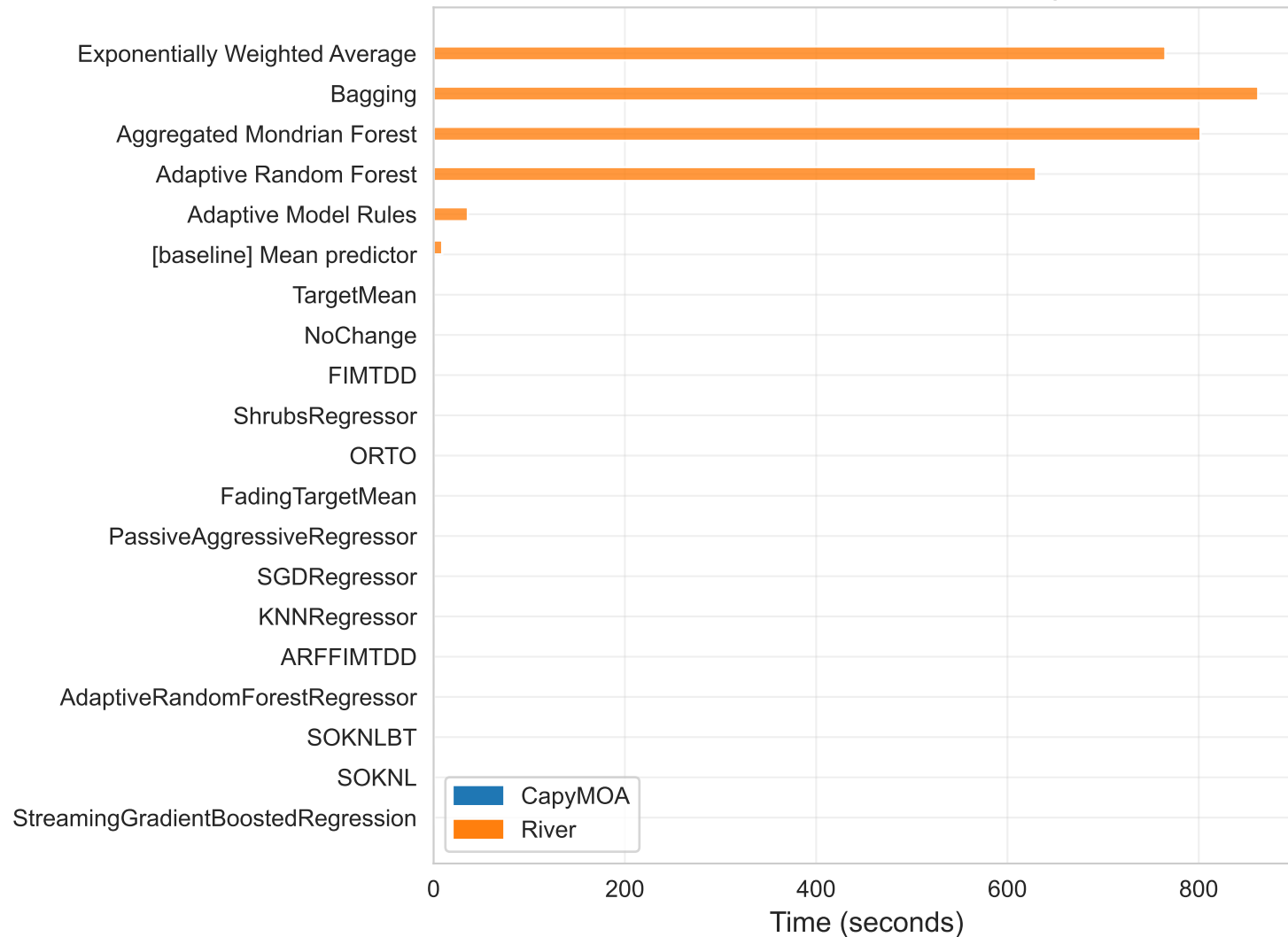
Memory Usage Comparison - Regression

Summary Table - Regression

Library	Model	Dataset	MAE	RMSE	Time (s)	Memory (MB)
CapyMOA	ARFFIMTDD	chickweights	49.9774	70.8264	0.28	608.75
CapyMOA	ARFFIMTDD	trumpapproval	1.5796	2.2164	0.51	588.78
CapyMOA	AdaptiveRandomForestRegressor	chickweights	24.2660	38.3467	0.49	606.89
CapyMOA	AdaptiveRandomForestRegressor	trumpapproval	1.1897	2.0848	0.41	599.69
CapyMOA	FIMTDD	chickweights	23.1647	37.4455	0.05	583.94
CapyMOA	FIMTDD	trumpapproval	0.8694	2.2151	0.08	584.52
CapyMOA	FadingTargetMean	chickweights	32.0746	46.8535	0.04	607.23
CapyMOA	FadingTargetMean	trumpapproval	1.0129	1.8277	0.11	610.44
CapyMOA	KNNRegressor	chickweights	49.9774	70.8264	0.08	589.08
CapyMOA	KNNRegressor	trumpapproval	1.5796	2.2164	0.21	608.66
CapyMOA	NoChange	chickweights	31.4618	52.9951	0.05	607.02
CapyMOA	NoChange	trumpapproval	0.1962	1.4118	0.07	607.20
CapyMOA	ORTO	chickweights	23.1647	37.4455	0.05	562.20
CapyMOA	ORTO	trumpapproval	0.8694	2.2151	0.09	565.48
CapyMOA	PassiveAggressiveRegressor	chickweights	0.0000	0.0000	0.10	608.84
CapyMOA	PassiveAggressiveRegressor	trumpapproval	0.0000	0.0000	0.16	609.59
CapyMOA	SGDRegressor	chickweights	0.0000	0.0000	0.11	599.89
CapyMOA	SGDRegressor	trumpapproval	0.0000	0.0000	0.17	589.27
CapyMOA	SOKNL	chickweights	25.2293	40.2089	0.80	593.83
CapyMOA	SOKNL	trumpapproval	1.2536	2.3480	0.67	596.38
CapyMOA	SOKNLBT	chickweights	49.9774	70.8264	0.45	560.56
CapyMOA	SOKNLBT	trumpapproval	1.5796	2.2164	0.59	583.59
CapyMOA	ShrubsRegressor	chickweights	121.3715	140.4732	0.05	609.62
CapyMOA	ShrubsRegressor	trumpapproval	40.7444	40.7807	0.09	606.98
CapyMOA	StreamingGradientBoostedRegression	chickweights	42.0000	42.0000	0.65	607.41
CapyMOA	StreamingGradientBoostedRegression	trumpapproval	43.7550	43.7550	1.05	618.30
CapyMOA	TargetMean	chickweights	49.9774	70.8264	0.04	589.31
CapyMOA	TargetMean	trumpapproval	1.5796	2.2164	0.07	589.38
CapyMOA	[baseline] Mean predictor	chickweights	49.9774	70.8264	0.00	589.38
CapyMOA	[baseline] Mean predictor	trumpapproval	1.5796	2.2164	0.00	589.42
River	Adaptive Model Rules	chickweights	24.1943	37.2166	22.01	0.05
River	Adaptive Model Rules	trumpapproval	1.3985	2.4334	49.82	0.12
River	Adaptive Random Forest	chickweights	25.5404	40.2238	458.23	0.96
River	Adaptive Random Forest	trumpapproval	0.7930	2.1155	801.45	1.41
River	Aggregated Mondrian Forest	chickweights	25.6742	41.7123	675.46	9.95
River	Aggregated Mondrian Forest	trumpapproval	0.2685	0.3494	928.48	20.01
River	Bagging	chickweights	23.1143	36.6311	861.86	0.61
River	Bagging	trumpapproval	0.9082	2.2372	862.74	1.31
River	Exponentially Weighted Average	chickweights	121.8183	141.0042	512.89	2.64
River	Exponentially Weighted Average	trumpapproval	40.7546	40.7905	1017.53	4.87
River	Hoeffding Adaptive Tree	chickweights	23.3739	37.6579	18.63	0.09
River	Hoeffding Adaptive Tree	trumpapproval	0.9213	2.2394	44.50	0.14
River	Hoeffding Tree	chickweights	23.1619	36.7336	9.41	0.04
River	Hoeffding Tree	trumpapproval	0.9561	2.2499	60.10	0.15
River	Linear Regression	chickweights	23.7587	37.0377	2.36	0.00
River	Linear Regression	trumpapproval	1.3145	3.9120	4.97	0.00
River	Linear Regression with l1 regularization	chickweights	23.7577	37.0780	2.50	0.00
River	Linear Regression with l1 regularization	trumpapproval	1.1538	3.8287	5.96	0.01
River	Linear Regression with l2 regularization	chickweights	25.2738	38.5885	2.36	0.00
River	Linear Regression with l2 regularization	trumpapproval	1.8715	4.1305	8.32	0.00
River	Passive-Aggressive Regressor, mode 1	chickweights	24.3423	37.5960	2.45	0.00
River	Passive-Aggressive Regressor, mode 1	trumpapproval	4.9840	6.9767	24.68	0.00
River	Passive-Aggressive Regressor, mode 2	chickweights	100.6242	143.0665	2.43	0.00
River	Passive-Aggressive Regressor, mode 2	trumpapproval	31.0933	34.6257	656.52	0.00
River	River MLP	chickweights	51.4078	80.9203	1031.87	0.01
River	River MLP	trumpapproval	1.5806	5.0339	1109.57	0.01
River	Stochastic Gradient Tree	chickweights	68.7588	80.3580	62.98	0.75
River	Stochastic Gradient Tree	trumpapproval	9.4297	17.9379	460.18	1.96
River	Streaming Random Patches	chickweights	23.7097	38.4416	844.00	0.30
River	Streaming Random Patches	trumpapproval	0.6664	1.9881	938.65	0.94
River	[baseline] Mean predictor	chickweights	50.2509	71.1144	1.88	0.00
River	[baseline] Mean predictor	trumpapproval	1.5676	2.2029	16.33	0.00
River	k-Nearest Neighbors	chickweights	24.9533	39.4523	149.25	2.52
River	k-Nearest Neighbors	trumpapproval	0.6405	1.5938	362.61	4.67

Performance Heatmap - Regression