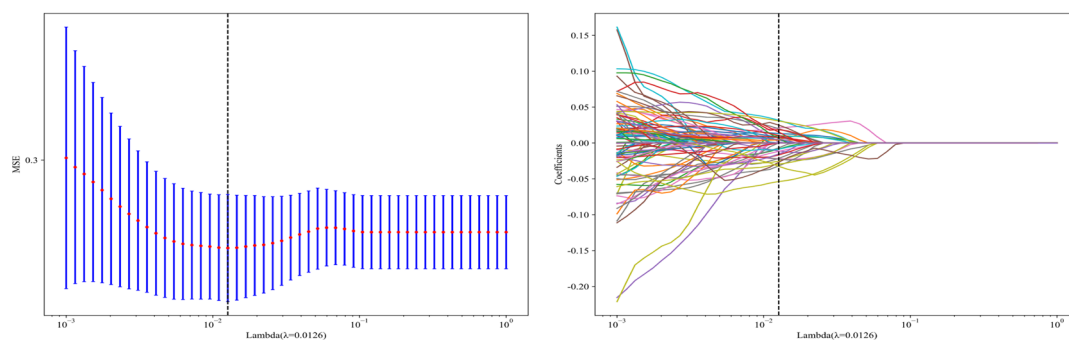
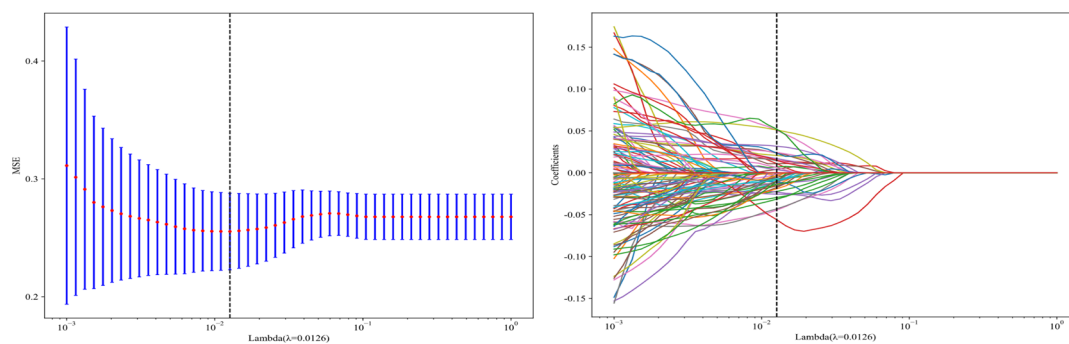
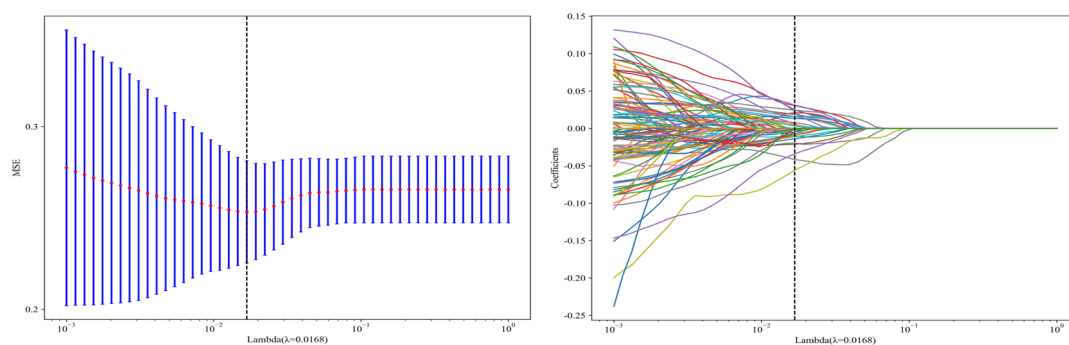


Table S1 Scanning parameters for the T1-CE sequence of different MR scanners

MR scanner	Repetition time (ms)	Echo time (ms)	Field of view (mm ²)	Slice thickness (mm)	Flip angle (deg)
GE SIGAL Pioneer	250	2.46	240×240	5	111
Siemens Skyra	250	2.49	240×240	5	70
Philips Ingenia	245	4.6	230×230	5	80
GE Signa HDXT	380	2.46	240×240	5	90

**Figure S1** LASSO based feature selection and coefficient distributions for ROI_I.**Figure S2** LASSO based feature selection and coefficient distributions for ROI2.**Figure S3** LASSO based feature selection and coefficient distributions for ROI4.

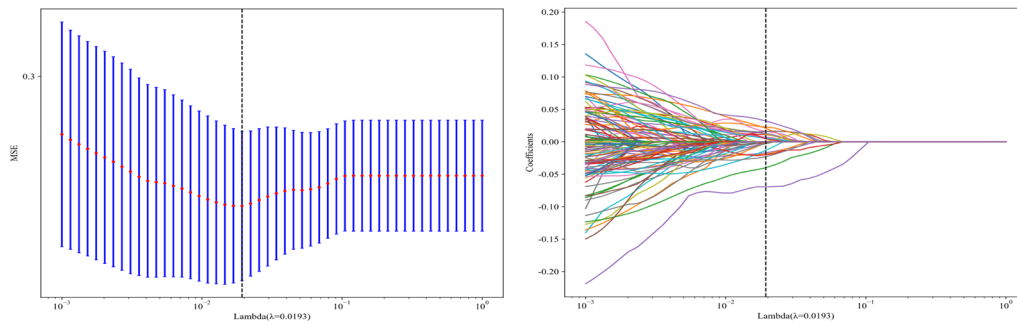


Figure S4 LASSO based feature selection and coefficient distributions for ROI6.

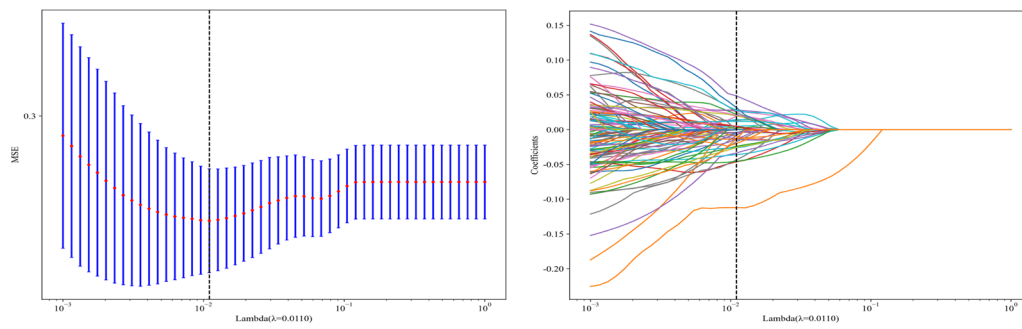


Figure S5 LASSO based feature selection and coefficient distributions for ROI8.

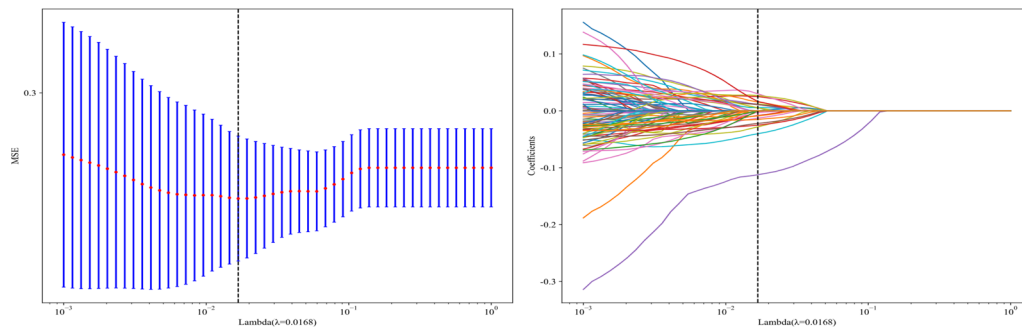


Figure S6 LASSO based feature selection and coefficient distributions for ROI10.

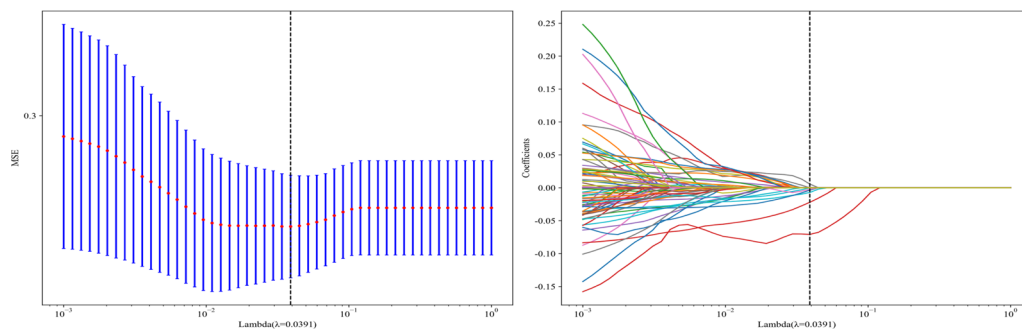


Figure S7 LASSO based feature selection and coefficient distributions for ROI_P2.

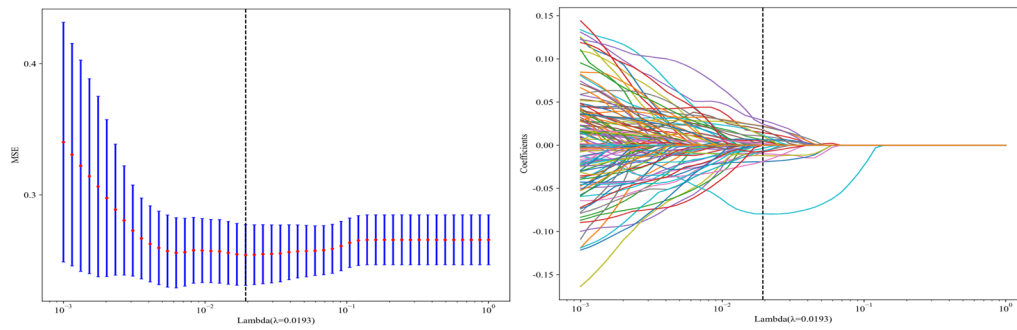


Figure S8 LASSO based feature selection and coefficient distributions for ROI_P4.

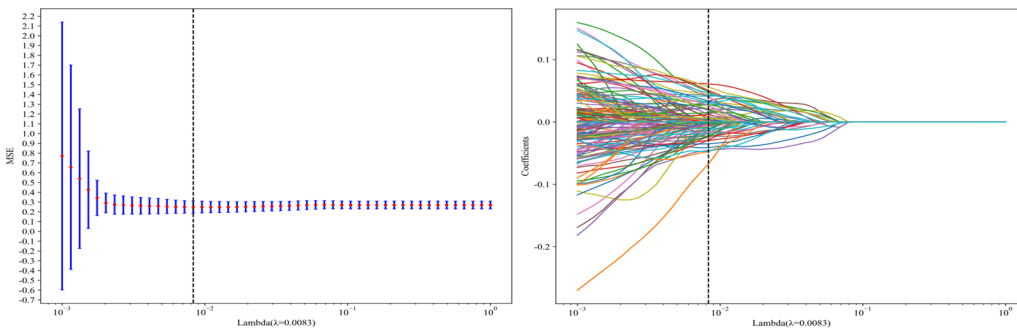


Figure S9 LASSO based feature selection and coefficient distributions for ROI_P6.

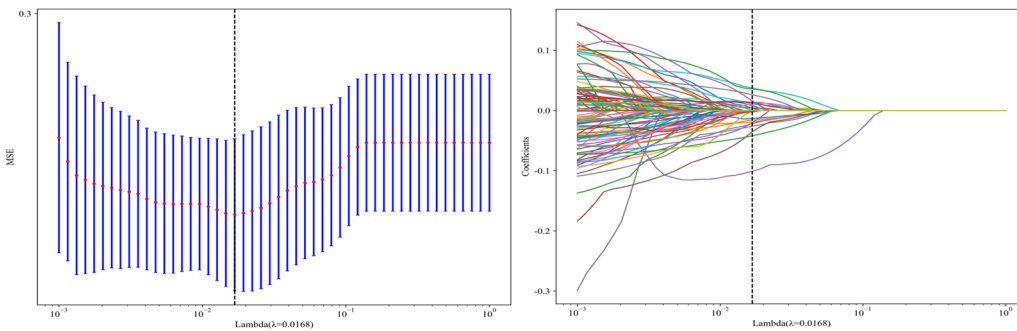


Figure S10 LASSO based feature selection and coefficient distributions for ROI_P8.

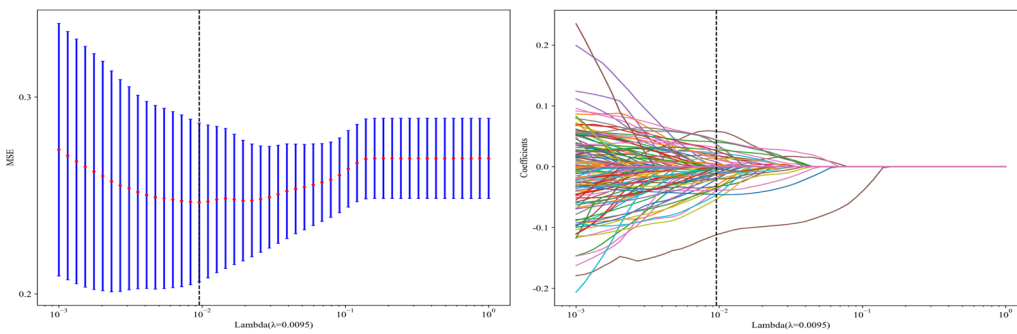


Figure S11 LASSO based feature selection and coefficient distributions for ROI_P10.

Table S2 Model performance of ROI_P2 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.628/0.459	0.672/0.602	0.561/0.960	0.697/0.240
KNN	0.732/0.699	0.841/0.708	0.532/0.493	0.935/0.789
RF	0.675/0.480	0.740/0.571	0.666/0.907	0.684/0.292
ExtraTrees	0.643/0.443	0.679/0.564	0.807/0.867	0.475/0.257
XGBoost	0.709/0.520	0.793/0.614	0.827/0.800	0.590/0.398
LightGBM	0.677/0.447	0.622/0.947	0.734/0.228	0.704/0.350
MLP	0.638/0.472	0.692/0.604	0.559/0.933	0.719/0.269

Table S3 Model performance of ROI_P4 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.665/0.510	0.726/0.624	0.789/0.827	0.539/0.367
KNN	0.753/0.714	0.863/0.763	0.580/0.600	0.930/0.765
RF	0.728/0.568	0.796/0.670	0.614/0.452	0.690/0.405
ExtraTrees	0.661/0.552	0.716/0.635	0.717/0.827	0.604/0.428
XGBoost	0.818/0.568	0.893/0.699	0.796/0.907	0.840/0.416
LightGBM	0.721/0.643	0.796/0.675	0.735/0.680	0.707/0.627
MLP	0.734/0.622	0.811/0.696	0.816/0.787	0.652/0.548

Table S4 Model performance of ROI_P6 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.788/0.547	0.855/0.630	0.872/0.781	0.683/0.438
KNN	0.705/0.736	0.902/0.732	0.467/0.328	1.000/0.927
RF	0.764/0.647	0.834/0.663	0.802/0.641	0.716/0.650
ExtraTrees	0.708/0.567	0.780/0.617	0.771/0.750	0.629/0.482
XGBoost	0.872/0.716	0.947/0.681	0.875/0.516	0.868/0.810
LightGBM	0.809/0.592	0.892/0.659	0.778/0.719	0.847/0.533
MLP	0.901/0.711	0.970/0.679	0.913/0.453	0.886/0.832

Table S5 Model performance of ROI_P8 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.697/0.561	0.754/0.642	0.817/0.773	0.575/0.467
KNN	0.765/0.672	0.867/0.705	0.622/0.573	0.910/0.716
RF	0.740/0.676	0.796/0.694	0.820/0.733	0.659/0.651
ExtraTrees	0.679/0.623	0.737/0.730	0.690/0.800	0.667/0.544
XGBoost	0.810/0.648	0.892/0.732	0.798/0.787	0.823/0.586
LightGBM	0.736/0.721	0.816/0.763	0.854/0.667	0.617/0.746
MLP	0.738/0.627	0.817/0.649	0.810/0.653	0.664/0.615

Table S6 Model performance of ROI_P10 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.740/0.586	0.808/0.618	0.827/0.667	0.652/0.550
KNN	0.691/0.684	0.891/0.582	0.388/0.173	1.000/0.911
RF	0.744/0.615	0.825/0.550	0.776/0.467	0.711/0.680
ExtraTrees	0.712/0.570	0.776/0.551	0.744/0.533	0.679/0.586
XGBoost	0.863/0.520	0.940/0.562	0.844/0.733	0.883/0.426
LightGBM	0.796/0.697	0.870/0.562	0.846/0.160	0.744/0.935
MLP	0.851/0.660	0.927/0.592	0.861/0.467	0.841/0.746

Table S7 Model performance of ROI_I model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.674/0.525	0.736/0.643	0.864/0.908	0.484/0.436
KNN	0.769/0.685	0.868/0.762	0.604/0.632	0.935/0.710
RF	0.735/0.605	0.811/0.678	0.803/0.724	0.668/0.549
ExtraTrees	0.649/0.664	0.714/0.672	0.601/0.513	0.696/0.735
XGBoost	0.810/0.546	0.899/0.645	0.885/0.776	0.736/0.438
LightGBM	0.752/0.458	0.842/0.603	0.827/0.895	0.678/0.253
MLP	0.775/0.634	0.863/0.654	0.724/0.618	0.825/0.642

Table S8 Model performance of ROI2 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.721/0.587	0.783/0.685	0.792/0.797	0.649/0.494
KNN	0.634/0.696	0.835/0.771	0.275/0.662	1.000/0.708
RF	0.736/0.649	0.812/0.699	0.619/0.676	0.856/0.637
ExtraTrees	0.698/0.554	0.768/0.677	0.750/0.811	0.644/0.440
XGBoost	0.845/0.661	0.920/0.717	0.889/0.757	0.801/0.619
LightGBM	0.761/0.711	0.853/0.742	0.859/0.662	0.662/0.732
MLP	0.766/0.570	0.847/0.730	0.802/0.959	0.730/0.399

Table S9 Model performance of ROI4 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.683/0.519	0.744/0.633	0.705/0.880	0.662/0.357
KNN	0.738/0.708	0.853/0.763	0.556/0.587	0.923/0.762
RF	0.745/0.617	0.813/0.658	0.688/0.693	0.803/0.583
ExtraTrees	0.688/0.675	0.762/0.695	0.600/0.653	0.779/0.685
XGBoost	0.830/0.679	0.908/0.759	0.866/0.827	0.794/0.613
LightGBM	0.777/0.646	0.853/0.715	0.800/0.787	0.754/0.583
MLP	0.750/0.626	0.837/0.706	0.798/0.787	0.701/0.554

Table S10 Model performance of ROI6 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.675/0.638	0.728/0.724	0.778/0.893	0.570/0.524
KNN	0.736/0.691	0.855/0.726	0.569/0.600	0.905/0.732
RF	0.734/0.757	0.803/0.802	0.741/0.720	0.726/0.774
ExtraTrees	0.686/0.654	0.751/0.724	0.682/0.813	0.689/0.583
XGBoost	0.832/0.733	0.913/0.826	0.813/0.907	0.851/0.655
LightGBM	0.770/0.733	0.805/0.861	0.787/0.820	0.708/0.761
MLP	0.791/0.687	0.861/0.770	0.820/0.760	0.761/0.655

Table S11 Model performance of ROI8 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.720/0.560	0.790/0.662	0.697/0.907	0.744/0.405
KNN	0.638/0.691	0.850/0.744	0.284/0.613	1.000/0.726
RF	0.729/0.716	0.799/0.689	0.709/0.493	0.749/0.815
ExtraTrees	0.688/0.654	0.747/0.667	0.614/0.600	0.764/0.679
XGBoost	0.817/0.613	0.897/0.712	0.842/0.827	0.791/0.518
LightGBM	0.762/0.630	0.840/0.675	0.684/0.680	0.841/0.607
MLP	0.813/0.658	0.887/0.724	0.748/0.853	0.881/0.571

Table S12 Model performance of ROI10 model in training and testing cohorts

Model (training/testing cohort)	Accuracy	AUC	Sensitivity	Specificity
LR	0.679/0.634	0.731/0.687	0.734/0.800	0.622/0.560
KNN	0.741/0.679	0.842/0.724	0.580/0.533	0.905/0.744
RF	0.760/0.613	0.821/0.667	0.785/0.680	0.734/0.583
ExtraTrees	0.665/0.642	0.721/0.693	0.727/0.667	0.602/0.631
XGBoost	0.830/0.691	0.906/0.659	0.788/0.520	0.873/0.768
LightGBM	0.778/0.626	0.833/0.648	0.880/0.693	0.674/0.595
MLP	0.754/0.663	0.826/0.736	0.751/0.827	0.756/0.589