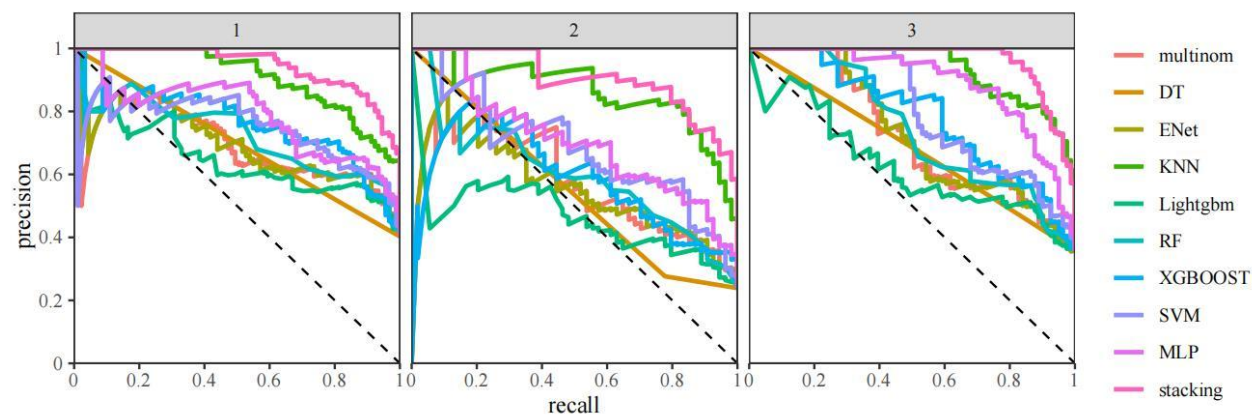


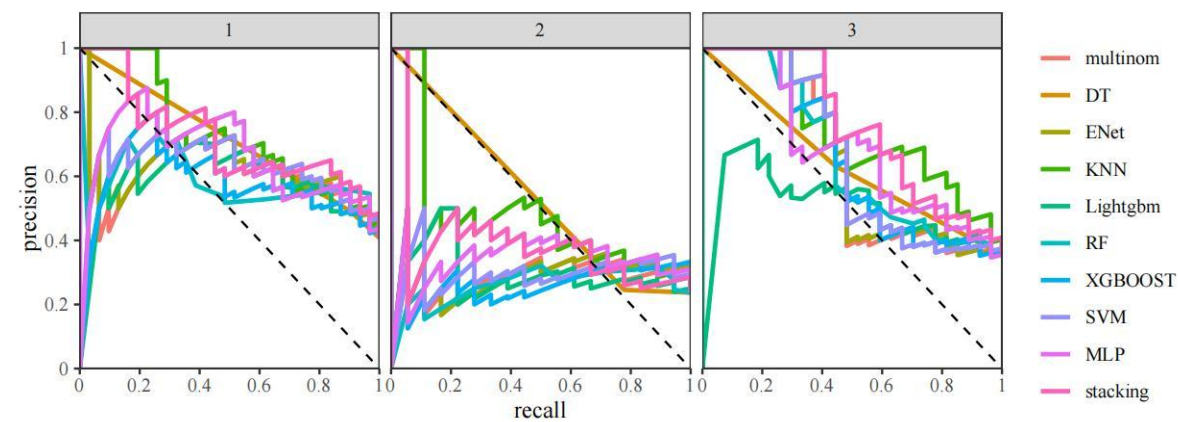
A

ROCs on traindata

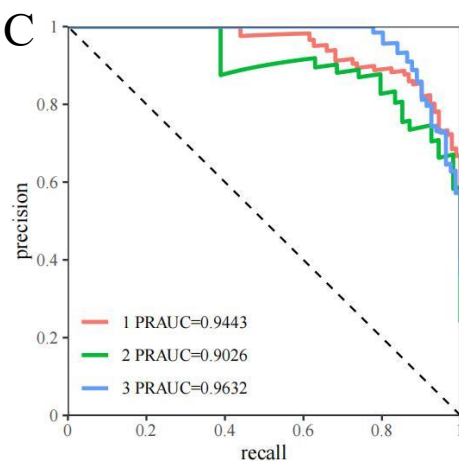


B

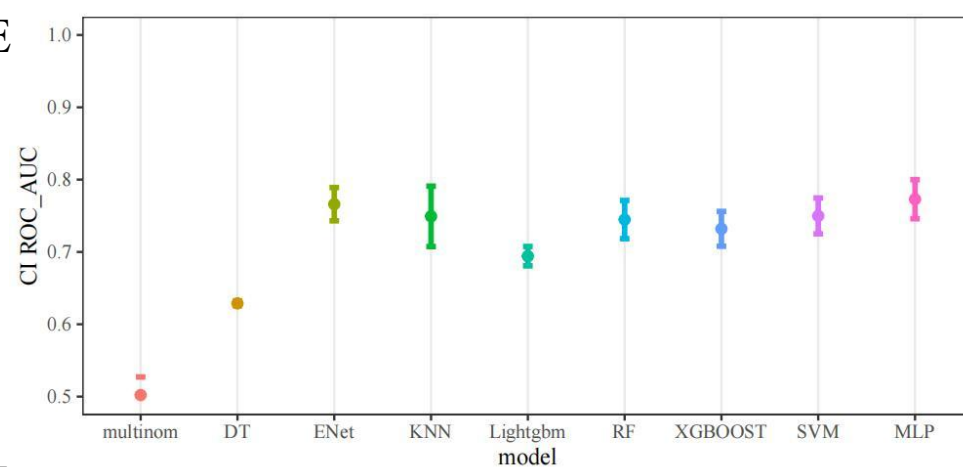
PRROCs on testdata



C



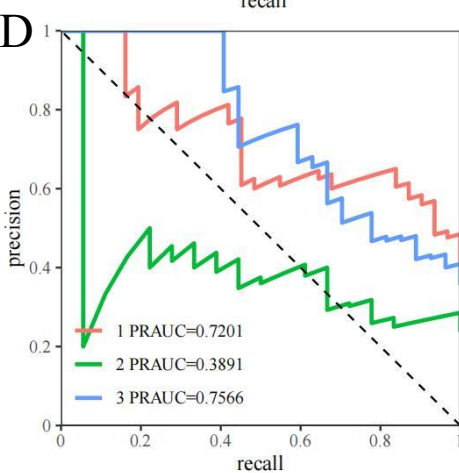
E



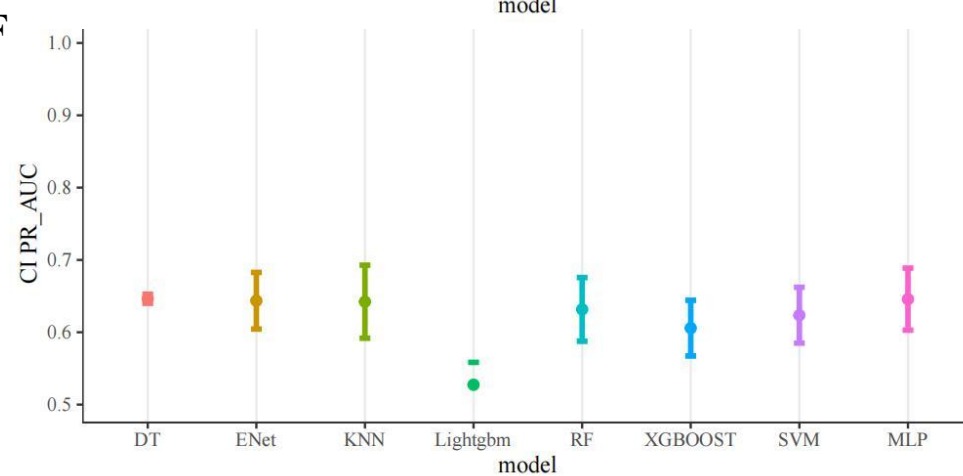
G

stacking	0.85	0.87	0.33	0.84	0.75	0.77	0.77	0.93	0.86	0.94	0.86	0.83	0.97	0.83	0.92
KNN	0.81	0.85	0.33	0.81	0.71	0.71	0.71	0.91	0.81	0.9	0.81	0.81	0.95	0.81	0.9
MLP	0.73	0.79	0.33	0.72	0.58	0.58	0.58	0.86	0.72	0.8	0.72	0.71	0.88	0.71	0.86
SVM	0.67	0.73	0.33	0.65	0.46	0.48	0.49	0.83	0.69	0.75	0.69	0.64	0.85	0.64	0.82
XGBOOST	0.68	0.73	0.33	0.64	0.47	0.49	0.5	0.84	0.67	0.71	0.67	0.64	0.83	0.64	0.83
RF	0.62	0.69	0.33	0.59	0.38	0.39	0.4	0.8	0.63	0.69	0.63	0.58	0.81	0.58	0.8
multinom	0.61	0.69	0.33	0.6	0.38	0.39	0.39	0.8	0.61	0.66	0.61	0.59	0.8	0.59	0.79
ENet	0.59	0.67	0.33	0.57	0.35	0.36	0.36	0.79	0.59	0.66	0.59	0.56	0.79	0.56	0.78
Lightgbm	0.54	0.61	0.33	0.6	0.22	0.25	0.28	0.78		0.58	0.55	0.47	0.74	0.47	0.75
DT	0.54	0.61	0.33	0.62	0.22	0.26	0.29	0.78		0.65	0.57	0.47	0.63	0.47	0.75
	accuracy	bal_accuracy	detection_prevalence	f_meas	j_index	kap	mcc	npv	ppv	pr_auc	precision	recall	roc_auc	sens	spec

D



F



H

KNN	0.59	0.67	0.33	0.55	0.34	0.36	0.36	0.79	0.56	0.65	0.56	0.55	0.77	0.55	0.79
stacking	0.63	0.69	0.33	0.57	0.38	0.41	0.43	0.83	0.6	0.62	0.6	0.57	0.75	0.57	0.8
MLP	0.57	0.65	0.33	0.52	0.3	0.32	0.32	0.78	0.54	0.56	0.54	0.53	0.73	0.53	0.77
SVM	0.55	0.63	0.33	0.46	0.25	0.29	0.3	0.79	0.48	0.53	0.48	0.49	0.69	0.49	0.76
ENet	0.51	0.61	0.33	0.45	0.21	0.24	0.24	0.76	0.46	0.52	0.46	0.46	0.68	0.46	0.75
multinom	0.51	0.61	0.33	0.45	0.21	0.24	0.24	0.76	0.45	0.52	0.45	0.46	0.68	0.46	0.75
RF	0.51	0.6	0.33	0.44	0.2	0.23	0.23	0.75	0.45	0.5	0.45	0.46	0.67	0.46	0.74
XGBOOST	0.51	0.6	0.33	0.44	0.2	0.23	0.23	0.76	0.44	0.5	0.44	0.46	0.66	0.46	0.74
Lightgbm	0.55	0.62	0.33	0.62	0.23	0.27	0.3	0.79		0.45	0.55	0.48	0.66	0.48	0.76
DT	0.53	0.59	0.33	0.58	0.19	0.22	0.27	0.78		0.63	0.56	0.45	0.59	0.45	0.74
	accuracy	bal_accuracy	detection_prevalence	f_meas	j_index	kap	mcc	npv	ppv	pr_auc	precision	recall	roc_auc	sens	spec

		Training Set	Validation Set	<i>P</i> -value
	Eyes	226	76	
	Gender (M:F)	71:42	26:12	0.412
	Age	9.58±8.93	8.84±7.38	0.554
	Z-AL	1.87±2.66	2.34±3.31	0.246
	Z-CCR	2.00±1.17	1.76±1.70	0.207
	Z-WTW	0.50±1.47	0.15±1.27	0.159
	CCT	547.31±50.78	542.61±43.18	0.555
	Cyl	-1.77±1.01	-1.82±0.98	0.731
	CECs	3282.52±431.19	3207.10±545.53	0.304
	IOP	14.83±3.67	13.92±2.98	0.126
	PO-1m BCVA	4.72±0.20	4.72±0.18	0.971
Variants	DN(-Cys)&HI	55	19	0.389
	DN(Others)	46	11	
	N-terminal	56	17	
Terminal	Middle Region	32	11	0.858
	C-terminal	13	3	
	cb EGF-like	58	21	
Domain	EGF-like	13	3	0.654
	TGFBP	9	3	
	Hybrid	8	1	
	LTBP-like	6	0	

1 **Supplementary Table 1.** Consistency test of the demographic ocular and genetic parameters of the
2 training set and the validation set. Z-AL: Z-score for axial length; Z-CCR: Z-score of corneal radius of
3 curvature; Z-WTW: Z-score for white to white; CCT: central corneal thickness; Cyl: corneal
4 astigmatism; CECs: corneal endothelial cells; IOP: intraocular pressure; PO-1m BCVA: best corrected
5 visual acuity at 1 month after surgery