

RESULTS OF TRIQ AND OTHER IQA MODELS

Here we report experimental results of TRIQ and other IQA models. Please refer to the paper (<https://arxiv.org/abs/2101.01097>) for details about the experiment settings.

In the first experiment, the models were trained on the training set of the combined database of KonIQ-10k, KonIQ-half-sized, and LIVE-wild databases, and then evaluated on the testing set. Table I reports the evaluation results.

Table I. Evaluation results on the Combined testing set

Models	PLCC↑	SROCC↑	RMSE↓
CaHDC	0.625	0.628	0.473
Koncept512	0.719	0.755	0.601
ViT-IQA	0.775	0.764	0.388
R50+ViT-IQA	0.858	0.835	0.304
TRIQ	0.884	0.868	0.280

Table II reports the results of the models trained on the combined training set of KonIQ-10k, KonIQ-half-sized, and LIVE-wild databases and then evaluated on the SPAQ database (<https://github.com/h4nwei/SPAQ>).

Table II. Evaluation results on the entire SPAQ database

Models	PLCC↑	SROCC↑	RMSE↓
CaHDC	0.647	0.656	0.720
Koncept512	0.733	0.744	0.781
ViT-IQA	0.754	0.762	0.585
R50+ViT-IQA	0.845	0.845	0.534
TRIQ	0.848	0.857	0.480

In addition, the trained models were also tested on individual testing sets from the KonIQ-10k, KonIQ-half-sized, and LIVE-wild databases, respectively, and Table III gives the evaluation results.

Table III. IQA models trained on **Combined** training set and evaluation on the separate testing sets of KonIQ-10k & KonIQ-half-sized and LIVE-wild databases

Models	Testing set of KonIQ-10k			Testing set of KonIQ-half-sized			Testing set of LIVE-wild database		
	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓
CaHDC	0.702	0.721	0.442	0.731	0.701	0.386	0.551	0.542	0.693
Koncept512	0.789	0.828	0.570	0.749	0.788	0.637	0.693	0.704	0.592
TRIQ	0.923	0.909	0.213	0.895	0.868	0.249	0.826	0.812	0.449

In order to evaluate the model performance across resolutions and databases, we have also trained the models on KonIQ-10k, KonIQ-half-sized databases, and their combination, respectively. The models were evaluated on both the testing sets of KonIQ-10k and KonIQ-half-sized databases and the entire LIVE-wild database. Tables IV, V and VI report the respective evaluation results.

Table IV. IQA models trained on **KonIQ-10k** training set and evaluation on the testing sets of KonIQ-10k & KonIQ-half-sized and entire LIVE-wild database

Models	Testing set of KonIQ-10k			Testing set of KonIQ-half-sized			Entire LIVE-wild database		
	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓
SGDNet	0.840	0.819	0.300	0.720	0.664	0.396	—	—	—
CaHDC	0.750	0.729	0.368	0.611	0.544	0.502	0.414	0.384	0.746
Koncept512	0.854	0.854	0.293	0.745	0.722	0.374	0.738	0.716	0.591
TRIQ	0.925	0.907	0.212	0.837	0.818	0.349	0.805	0.781	0.503

Table V. IQA models trained on **KonIQ-half-sized** training set and evaluation on the testing sets of KonIQ-10k & KonIQ-half-sized and entire LIVE-wild database

Models	Testing set of KonIQ-10k			Testing set of KonIQ-half-sized			Entire LIVE-wild database		
	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓	PLCC↑	SROCC↑	RMSE↓
SGDNet	0.772	0.777	0.431	0.823	0.798	0.320	—	—	—
CaHDC	0.627	0.658	0.458	0.763	0.723	0.364	0.578	0.575	0.686
Koncept512	0.869	0.876	0.575	0.923	0.901	0.215	0.819	0.806	0.681
TRIQ	0.893	0.882	0.327	0.925	0.905	0.211	0.800	0.779	0.493

Table VI. IQA models trained on **KonIQ-10k & KonIQ-half-sized** training sets and evaluation on the testing sets of KonIQ-10k & KonIQ-half-sized and entire LIVE-wild database

Models	Combined Testing set of KonIQ-10k & KonIQ-half-sized			Testing set of KonIQ-10k			Testing set of KonIQ-half-sized			Entire LIVE-wild database		
	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE
SGDNet	0.813	0.782	0.322	0.860	0.843	0.284	0.766	0.721	0.355	—	—	—
CaHDC	0.683	0.669	0.411	0.693	0.723	0.436	0.750	0.718	0.385	0.566	0.575	0.687
Koncept512	0.807	0.817	0.342	0.871	0.870	0.281	0.785	0.809	0.285	0.708	0.722	0.613
TRIQ	0.900	0.880	0.244	0.919	0.906	0.219	0.889	0.861	0.266	0.845	0.784	0.500

Table VI. TRIQ trained on **SPAQ, KonIQ-10k, KonIQ-half-sized, LIVE-wild combined** training set and evaluation on the testing sets of individual databases

Models	Combined Testing set			Testing set of SPAQ			Testing set of KonIQ-10k			Testing set of KonIQ-half-sized			Testing set of LIVE-wild		
	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE	PLCC	SROCC	RMSE
TRIQ	0.885	0.879	0.316	0.916	0.911	0.347	0.907	0.896	0.266	0.891	0.870	0.258	0.829	0.820	0.464