Table 6.11: Results of the data augmentation evaluation when unifying the training sets. p stands for probability, the blue-colored values indicate the best F-score value, and the red-colored values indicate the best IoU values. The values highlighted in green show the data augmentation techniques in which the P-value achieved values lower than 0.05, and thus the null hypothesis was rejected (i.e., there is a statistical difference and the results achieved are better than without data augmentation). The underscored values show the techniques where training with the unified set achieved a P-value lower than 0.05 when compared with training with a single training set, and the null hypothesis was rejected. Source: (Krinski et al., 2023)

p	Augmentation	CC-CCII		MedSeg		MosMed		Ricord1a		Zenodo	
		F-score	IoU	F-score	IoU	F-score	IoU	F-score	IoU	F-score	IoU
	No Augmentation	0.8636	0.8087	0.8881	0.8253	0.8185	0.7547	0.8599	0.7947	0.9096	0.8514
0.05	CLAHE	0.8580	0.8025	0.8873	0.8247	0.8198	0.7554	0.8585	0.7932	0.9098	0.8521
	Coarse Dropout	0.8624	0.8071	0.8882	0.8260	0.8266	0.7631	0.8585	0.7930	0.9097	0.8517
	Elastic Transform	**0.8722**	**0.8168**	0.8913	0.8294	0.8281	0.7634	0.8553	0.7887	0.9113	0.8536
	Emboss	0.8659	0.8103	0.8876	0.8250	0.8237	0.7607	0.8552	0.7889	0.9113	0.8536
	Flip	0.8659	0.8103	0.8911	0.8290	0.8265	0.7628	0.8610	0.7958	0.9111	0.8535
	Gaussian Blur	0.8641	0.8089	0.8868	0.8242	0.8189	0.7555	0.8579	0.7925	0.9106	0.8527
	Grid Distortion	0.8687	0.8133	**0.8922**	**0.8303**	0.8272	0.7624	0.8605	0.7951	0.9115	0.8539
	Grid Dropout	0.8631	0.8069	0.8867	0.8243	0.8218	0.7576	0.8578	0.7917	0.9094	0.8511
	Image Compression	0.8620	0.8060	0.8870	0.8242	0.8203	0.7564	0.8589	0.7932	0.9101	0.8519
	Median Blur	0.8608	0.8055	0.8884	0.8259	0.8227	0.7584	0.8592	0.7933	0.9103	0.8526
	Optical Distortion	0.8685	0.8126	0.8898	0.8279	0.8236	0.7609	0.8608	0.7958	0.9110	0.8535
	Piecewise Affine	0.8708	0.8153	0.8915	0.8296	**0.8318**	**0.7682**	**0.8709**	**0.8073**	**0.9119**	**0.8544**
	Posterize	0.8643	0.8092	0.8897	0.8274	0.8261	0.7627	0.8641	0.7996	0.9110	0.8535
	RBC	0.8614	0.8054	0.8856	0.8226	0.8207	0.7569	0.8565	0.7905	0.9103	0.8522
	Random Crop	0.8607	0.8056	0.8870	0.8239	0.8195	0.7554	0.8524	0.7856	0.9088	0.8505
	Random Gamma	0.8675	0.8105	0.8854	0.8225	0.8192	0.7545	0.8526	0.7860	0.9087	0.8502
	Random Snow	0.8647	0.8096	0.8873	0.8244	0.8213	0.7580	0.8586	0.7931	0.9103	0.8527
	Rotate	0.8695	0.8144	0.8902	0.8279	0.8277	0.7635	0.8609	0.7956	0.9118	0.8543
	Sharpen	0.8661	0.8098	0.8901	0.8277	0.8167	0.7532	0.8545	0.7884	0.9108	0.8526
	Shift Scale Rotate	0.8680	0.8129	0.8910	0.8293	0.8289	0.7657	0.8647	0.8001	0.9115	0.8541
0.1	CLAHE	0.8561	0.8004	0.8866	0.8237	0.8172	0.7548	0.8606	0.7953	0.9084	0.8502
	Coarse Dropout	0.8609	0.8059	0.8883	0.8264	0.8239	0.7612	0.8648	0.8004	0.9103	0.8528
	Elastic Transform	0.8720	0.8176	0.8927	0.8313	0.8315	0.7676	0.8567	0.7904	**0.9122**	**0.8552**
	Emboss	0.8633	0.8083	0.8885	0.8263	0.8189	0.7564	0.8609	0.7958	0.9114	0.8539
	Flip	0.8691	0.8139	0.8907	0.8289	0.8267	0.7625	0.8542	0.7880	0.9104	0.8527
	Gaussian Blur	0.8657	0.8108	0.8880	0.8259	0.8134	0.7508	0.8576	0.7916	0.9098	0.8516
	Grid Distortion	0.8713	0.8173	0.8935	0.8317	0.8319	0.7685	0.8536	0.7870	0.9119	0.8545
	Grid Dropout	0.8610	0.8048	0.8873	0.8254	0.8297	0.7670	**0.8668**	**0.8023**	0.9108	0.8530
	Image Compression	0.8634	0.8081	0.8875	0.8250	0.8205	0.7570	0.8605	0.7950	0.9091	0.8511
	Median Blur	0.8627	0.8076	0.8890	0.8261	0.8155	0.7527	0.8561	0.7899	0.9100	0.8523
	Optical Distortion	0.8629	0.8085	0.8911	0.8291	0.8255	0.7615	0.8581	0.7925	0.9115	0.8539
	Piecewise Affine	0.8729	0.8180	**0.8937**	**0.8320**	0.8306	0.7666	0.8572	0.7910	0.9121	0.8547
	Posterize	0.8621	0.8074	0.8890	0.8265	0.8212	0.7576	0.8610	0.7958	0.9106	0.8526
	RBC	0.8617	0.8049	0.8885	0.8254	0.8241	0.7603	0.8608	0.7958	0.9098	0.8519
	Random Crop	0.8606	0.8050	0.8870	0.8239	0.8166	0.7536	0.8559	0.7899	0.9095	0.8513
	Random Gamma	0.8645	0.8091	0.8882	0.8253	0.8197	0.7550	0.8566	0.7906	0.9091	0.8510
	Random Snow	0.8616	0.8065	0.8896	0.8270	0.8227	0.7595	0.8576	0.7921	0.9106	0.8530
	Rotate	0.8724	0.8172	0.8924	0.8312	**0.8353**	**0.7710**	0.8568	0.7908	0.9117	0.8541
	Sharpen	0.8633	0.8080	0.8899	0.8278	0.8236	0.7603	0.8633	0.7985	0.9116	0.8545
	Shift Scale Rotate	**0.8743**	**0.8204**	0.8926	0.8317	0.8297	0.7653	0.8553	0.7890	0.9118	0.8544

15 in MosMed, and 14 in Zenodo. At a probability of 0.4, the unified training set achieved higher valued in 19 augmentation techniques in CC-CCII, 7 data augmentation techniques in the MedSeg dataset, 15 in MosMed, and 14 in Zenodo.

At a probability of 0.45, the unified training set achieved higher valued in all augmentation techniques in CC-CCII, 12 data augmentation techniques in the MedSeg dataset, 14 in MosMed,