

Image	Level	Method	Optimization	Thresholds	Objective Value	SSIM	PSNR	Unique Values
T22		2 Otsu	SA	[60]	32499566	0.606568	19.61971	[0, 127]
T22		2 Kapur	SA	[60]	-7.23155	0.422429	5.810659	[0, 255]
T22		2 Otsu	VNS	[61]	32503345	0.606568	19.61971	[0, 127]
T22		2 Kapur	VNS	[177]	-7.54044	0.422429	5.810659	[0, 255]
T22		3 Otsu	SA	[33 94]	14171216	0.641719	15.25631	[0, 85, 170]
T22		3 Kapur	SA	[13 188]	-9.62592	0.543383	9.416721	[0, 128, 255]
T22		3 Otsu	VNS	[33 93]	14184048	0.641719	15.25631	[0, 85, 170]
T22		3 Kapur	VNS	[65 124]	-10.6372	0.543383	9.416721	[0, 128, 255]
T22		4 Otsu	SA	[22 65 114]	7322447	0.577386	12.08368	[0, 63, 126, 189]
T22		4 Kapur	SA	[1 168 180]	-11.2073	0.663419	12.90847	[0, 85, 170, 255]
T22		4 Otsu	VNS	[25 68 118]	7407399	0.577386	12.08368	[0, 63, 126, 189]
T22		4 Kapur	VNS	[61 117 180]	-14.3093	0.663419	12.90847	[0, 85, 170, 255]
T22		5 Otsu	SA	[18 50 86]	4760932	0.501907	10.06785	[0, 51, 102, 153, 204]
T22		5 Kapur	SA	[138 179 255]	-15.036	0.753503	16.35613	[0, 64, 128, 191, 255]
T22		5 Otsu	VNS	[19 50 89]	4811223	0.501907	10.06785	[0, 51, 102, 153, 204]
T22		5 Kapur	VNS	[47 84 128]	-17.1296	0.753503	16.35613	[0, 64, 128, 191, 255]
T32		2 Otsu	SA	[60]	33726753	0.640309	19.78661	[0, 127]
T32		2 Kapur	SA	[43]	-6.83795	0.092931	4.342287	[0, 128, 255]
T32		2 Otsu	VNS	[62]	33763406	0.640309	19.78661	[0, 127]
T32		2 Kapur	VNS	[111]	-7.47276	0.092931	4.342287	[0, 128, 255]
T32		3 Otsu	SA	[43 110]	15603533	0.655131	15.21512	[0, 85, 170]
T32		3 Kapur	SA	[71 129]	-10.546	0.22208	7.209123	[0, 85, 170, 255]
T32		3 Otsu	VNS	[42 111]	15620662	0.655131	15.21512	[0, 85, 170]
T32		3 Kapur	VNS	[107 184]	-11.321	0.22208	7.209123	[0, 85, 170, 255]
T32		4 Otsu	SA	[27 73 130]	8266186	0.576783	12.22954	[0, 63, 126, 189]
T32		4 Kapur	SA	[141 241 255]	-12.9043	0.2974	9.941813	[0, 64, 127, 191, 255]
T32		4 Otsu	VNS	[22 66 121]	7838343	0.576783	12.22954	[0, 63, 126, 189]
T32		4 Kapur	VNS	[61 119 180]	-14.3718	0.2974	9.941813	[0, 64, 127, 191, 255]
T32		5 Otsu	SA	[21 59 95]	5342673	0.496871	10.27501	[0, 51, 102, 153, 204]
T32		5 Kapur	SA	[18 52 128]	-15.9238	0.358054	12.54102	[0, 51, 102, 153, 204, 255]
T32		5 Otsu	VNS	[21 62 98]	5398230	0.496871	10.27501	[0, 51, 102, 153, 204]
T32		5 Kapur	VNS	[46 84 128]	-17.275	0.358054	12.54102	[0, 51, 102, 153, 204, 255]
T42		2 Otsu	SA	[62]	43503828	0.641247	19.13375	[0, 127]
T42		2 Kapur	SA	[126]	-7.79886	0.118947	4.640119	[0, 128, 255]
T42		2 Otsu	VNS	[61]	43504309	0.641247	19.13375	[0, 127]
T42		2 Kapur	VNS	[120]	-7.80182	0.118947	4.640119	[0, 128, 255]
T42		3 Otsu	SA	[46 121]	18050179	0.651108	15.01664	[0, 85, 170]
T42		3 Kapur	SA	[90 112]	-10.4729	0.252232	7.612371	[0, 85, 170, 255]
T42		3 Otsu	VNS	[44 121]	18094018	0.651108	15.01664	[0, 85, 170]
T42		3 Kapur	VNS	[114 181]	-11.4668	0.252232	7.612371	[0, 85, 170, 255]
T42		4 Otsu	SA	[42 104 160]	12892661	0.571752	12.26948	[0, 63, 126, 189]
T42		4 Kapur	SA	[61 71 170]	-13.1709	0.335002	10.49106	[0, 64, 127, 191, 255]
T42		4 Otsu	VNS	[28 75 130]	10918991	0.571752	12.26948	[0, 63, 126, 189]

T42	4 Kapur	VNS	[108 166 201]	-14.3856	0.335002	10.49106	[0, 64, 127, 191, 255]
T42	5 Otsu	SA	[47 126 221]	15183947	0.478246	10.37644	[0, 51, 102, 153, 204]
T42	5 Kapur	SA	[91 98 148]	-15.904	0.399864	13.27516	[0, 51, 102, 153, 204, 255]
T42	5 Otsu	VNS	[24 67 110]	7117582	0.478246	10.37644	[0, 51, 102, 153, 204]
T42	5 Kapur	VNS	[55 105 148]	-17.2901	0.399864	13.27516	[0, 51, 102, 153, 204, 255]
T52	2 Otsu	SA	[57]	36070444	0.625493	19.11915	[0, 127]
T52	2 Kapur	SA	[95]	-7.36874	0.159674	5.012543	[0, 128, 255]
T52	2 Otsu	VNS	[56]	36081019	0.625493	19.11915	[0, 127]
T52	2 Kapur	VNS	[128]	-7.64883	0.159674	5.012543	[0, 128, 255]
T52	3 Otsu	SA	[45 113]	15540266	0.605559	13.95012	[0, 85, 170]
T52	3 Kapur	SA	[176 149]	-10.8798	0.296732	8.006446	[0, 85, 170, 255]
T52	3 Otsu	VNS	[45 112]	15534033	0.605559	13.95012	[0, 85, 170]
T52	3 Kapur	VNS	[117 182]	-11.3669	0.296732	8.006446	[0, 85, 170, 255]
T52	4 Otsu	SA	[36 85 128]	9659786	0.539347	11.50958	[0, 63, 126, 189]
T52	4 Kapur	SA	[13 109 181]	-13.3855	0.378734	10.8697	[0, 64, 127, 191, 255]
T52	4 Otsu	VNS	[38 91 134]	9742518	0.539347	11.50958	[0, 63, 126, 189]
T52	4 Kapur	VNS	[95 134 181]	-14.2985	0.378734	10.8697	[0, 64, 127, 191, 255]
T52	5 Otsu	SA	[37 84 122]	7663651	0.460926	9.850065	[0, 51, 102, 153, 204]
T52	5 Kapur	SA	[15 30 121]	-14.5375	0.442792	13.67707	[0, 51, 102, 153, 204, 255]
T52	5 Otsu	VNS	[24 64 102]	5976101	0.460926	9.850065	[0, 51, 102, 153, 204]
T52	5 Kapur	VNS	[92 131 168]	-17.2476	0.442792	13.67707	[0, 51, 102, 153, 204, 255]
T62	2 Otsu	SA	[60]	48677801	0.612679	18.61625	[0, 127]
T62	2 Kapur	SA	[74]	-6.93815	0.170073	5.310577	[0, 128, 255]
T62	2 Otsu	VNS	[58]	48712556	0.612679	18.61625	[0, 127]
T62	2 Kapur	VNS	[172]	-7.937	0.170073	5.310577	[0, 128, 255]
T62	3 Otsu	SA	[47 121]	19116749	0.598409	14.14605	[0, 85, 170]
T62	3 Kapur	SA	[69 159]	-10.6574	0.306136	8.491523	[0, 85, 170, 255]
T62	3 Otsu	VNS	[49 120]	19177736	0.598409	14.14605	[0, 85, 170]
T62	3 Kapur	VNS	[121 182]	-11.4565	0.306136	8.491523	[0, 85, 170, 255]
T62	4 Otsu	SA	[40 96 148]	11518134	0.541418	11.76429	[0, 63, 126, 189]
T62	4 Kapur	SA	[130 184 191]	-14.0349	0.396742	11.59033	[0, 64, 127, 191, 255]
T62	4 Otsu	VNS	[40 99 148]	11549240	0.541418	11.76429	[0, 63, 126, 189]
T62	4 Kapur	VNS	[112 170 201]	-14.529	0.396742	11.59033	[0, 64, 127, 191, 255]
T62	5 Otsu	SA	[38 87 128]	8291006	0.47284	10.12238	[0, 51, 102, 153, 204]
T62	5 Kapur	SA	[62 133 168]	-16.1047	0.462044	14.61314	[0, 51, 102, 153, 204, 255]
T62	5 Otsu	VNS	[33 79 119]	8082170	0.47284	10.12238	[0, 51, 102, 153, 204]
T62	5 Kapur	VNS	[96 137 170]	-17.4077	0.462044	14.61314	[0, 51, 102, 153, 204, 255]

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