

# Frame Interpolation for Cloud-Based Mobile Video Streaming

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## APPENDIX

TABLE III. Average PSNR for HD video sequences

Sequence	Algorithm	1% (PLR)			3% (PLR)			5% (PLR)		
		QP 27	QP 32	QP 37	QP 27	QP 32	QP 37	QP 27	QP 32	QP 37
BQTerrace	FC	25.2432	25.2179	25.3932	26.244775	26.69735	25.69185	26.91565	26.18165	26.6829
	BMA	29.4008	29.3551	29.0321	29.070575	28.4839	29.480625	28.0274	26.900088	28.317725
	Proposed	34.7003	34.2211	32.951	34.22555	33.42165	33.043225	32.858675	31.291813	32.107325
Cactus	FC	23.3833	23.6229	22.1943	21.88065	21.7775	21.017225	21.311938	20.702463	20.390463
	BMA	27.8169	27.6374	27.2405	26.89515	26.85805	26.97515	26.431775	26.135513	26.561313
	Proposed	30.2461	30.4243	30.3357	29.43545	29.441	29.616575	28.9046	28.6516	29.273163
Rush_hour	FC	21.3486	21.2988	19.9627	21.26185	21.073275	20.5269	22.092388	21.71125	20.785263
	BMA	29.1569	29.1554	27.4403	28.085825	29.27325	28.012875	28.426363	27.748975	28.1525
	Proposed	32.9946	32.9813	32.1557	32.070125	33.32635	32.542275	32.7078	31.651038	32.494275

TABLE IV. Average PSNR for non-HD video sequences

Sequence	Algorithm	1%			3%			5%		
		QP 21	QP 23	QP 30	QP 21	QP 23	QP 30	QP 21	QP 23	QP 30
BlowingBubbles	FC	26.6671	26.5818	25.4311	22.724525	22.135375	22.031975	22.0715	21.764688	20.8691
	BMA	29.2497	29.3069	29.3204	28.037075	27.913075	28.262125	26.258438	26.661538	25.49985
	Proposed	32.8957	32.8804	32.5554	31.75895	31.68	31.721725	29.12265	29.94855	28.298375
Flower vase (832×480)	FC	QP 19	QP 22	QP 27	QP 19	QP 22	QP 27	QP 19	QP 22	QP 27
		34.0446	33.2339	32.1672	33.6769	30.22825	29.103975	29.626575	28.188825	28.6421
	BMA	40.9063	40.7886	40.2935	41.5893	41.422175	39.75925	40.0074	39.830163	39.8129
	Proposed	43.6805	43.4677	42.6814	44.484875	44.7111	43.29595	44.163163	43.8247	42.906225
RaceHorses (832×480)	FC	QP 27	QP 29	QP 37	QP 27	QP 29	QP 37	QP 27	QP 29	QP 37
		15.6651	15.6167	15.657	14.8043	14.83665	14.90525	14.780538	14.863875	15.143825
	BMA	17.8541	17.8916	18.2004	17.4203	17.70035	17.747075	17.313088	17.378375	17.877313
	Proposed	20.0254	20.0742	20.41	19.58105	19.853775	19.889775	19.471438	19.60395	20.150625

TABLE V. Average computational time of HD video sequences

Sequence	Algorithm	1% (PLR)			3% (PLR)			5% (PLR)		
		QP 27	QP 32	QP 37	QP 27	QP 32	QP 37	QP 27	QP 32	QP 37
BQTerrace	BMA	1748.53045	1734.26683	1744.72494	1856.03563	1817.64689	1806.66057	3383.6576	3415.26973	3364.38238
	Proposed	12.477895	12.49347	12.589352	12.5099425	12.5323258	12.7712035	12.5826791	12.6544354	12.7165948
Cactus	BMA	1812.3262	1815.75855	1813.47535	1865.3222	1826.64524	1841.92017	3657.9894	3474.168	3522.71973
	Proposed	12.6025201	12.715382	12.738267	12.65332	12.7874503	12.8112125	12.6038569	12.8153914	12.7828589
Rush_hour	BMA	1455.26441	1451.42148	1444.10877	1456.64139	1460.31246	1477.69298	2757.98097	2776.21874	2714.77782
	Proposed	12.676578	14.848038	13.888899	12.6868988	14.7329763	14.3541953	12.2904226	14.8744468	14.4716305

TABLE VI. Average computational time of non-HD video sequences

Sequence	Algorithm	1% (PLR)			3% (PLR)			5% (PLR)		
		QP 21	QP 23	QP 30	QP 21	QP 23	QP 30	QP 21	QP 23	QP 30
BlowingBubbles	BMA	79.921818	63.481073	102.890182	71.508576	71.1960463	71.3787865	141.588345	156.473912	161.44053
	Proposed	1.508997	1.516878	1.518721	1.51949075	1.50877525	1.5139575	2.0109785	2.01243133	2.01781233
Flower vase (832×480)	BMA	QP 19	QP 22	QP 27	QP 19	QP 22	QP 27	QP 19	QP 22	QP 27
		398.591966	448.765788	420.146287	508.33831	526.452203	520.880732	1321.21549	1305.40621	1308.0575
	Proposed	3.132107	3.15418	3.131794	3.13594075	3.1475675	3.1352845	4.19657217	4.19241667	4.19702067
RaceHorses (832×480)	BMA	QP 27	QP 29	QP 37	QP 27	QP 29	QP 37	QP 27	QP 29	QP 37
		379.176938	488.472659	296.197198	508.487726	471.103954	476.644417	1333.08302	1221.59437	1161.13726
	Proposed	3.119176	3.149487	3.148898	3.1265075	3.13520525	3.13109775	4.17790533	4.17792767	4.16943

Fig. 3. Visual comparisons





