

Method	MCCD	Audio QA			Visual QA			AVQA							All
		CNT	COMP	Avg.	CNT	LOC	Avg.	EXIST	LOC	CNT	COMP	TEMP	Avg.	Avg.	
FCNLSTM	×	70.45	66.22	68.88	63.89	46.74	55.21	82.01	46.28	59.34	62.15	47.33	60.06	60.34	
	✓	70.99	66.5	69.34	66.08	59.02	62.51	83.5	57.17	60.47	61.58	57.54	64.11	64.61	
CONVLSTM	×	74.07	68.89	72.15	67.47	54.56	60.94	82.91	50.81	63.03	60.27	51.58	62.24	63.65	
	✓	72.76	69.53	71.57	69.59	58.12	63.79	82.69	56.09	62.13	62.03	55.11	63.87	65.21	
BiLSTM Attn	×	70.35	47.92	62.05	64.64	64.33	64.48	78.39	45.85	56.91	53.09	49.76	57.1	59.92	
	✓	68.24	54.88	63.31	61.65	55.92	58.75	79.15	41.96	55.02	49.41	49.15	55.18	57.56	
HCAtn	×	70.25	54.91	64.57	64.05	66.37	65.22	79.1	49.51	59.97	55.25	56.43	60.19	62.3	
	✓	69.52	53.37	63.56	63.99	65.47	64.74	78.64	47.28	61.11	55.86	55.72	60.03	61.9	
MCAN	×	77.5	55.24	69.25	71.56	70.93	71.24	80.4	54.48	64.91	57.22	47.57	61.58	65.49	
	✓	78.27	56.57	70.27	71.93	71.18	71.55	81.48	54.24	65.77	55.86	46.84	61.54	65.74	
GRU	×	72.21	66.89	70.24	67.72	70.11	68.93	81.71	59.44	62.64	61.88	60.07	65.18	67.07	
	✓	73.35	66.16	70.7	67.25	71.43	69.36	81.98	60.11	63.08	62.76	61.19	65.84	67.63	
HME	×	74.76	63.56	70.61	67.97	69.46	68.76	80.3	53.18	63.19	62.69	59.83	64.05	66.45	
	✓	72.17	64.65	69.4	67.42	60.82	64.08	79.66	48.7	65.14	61.22	55.72	60.4	64.2	
PSAC	×	75.64	66.06	72.09	68.64	69.79	69.22	77.59	55.02	63.42	61.17	59.47	63.52	66.54	
	✓	75.02	65.66	71.57	69.09	69.88	69.49	79.35	53.04	61.98	61.13	57.66	62.85	66.15	
AVSD	×	72.41	61.9	68.52	67.39	74.19	70.83	81.61	58.79	63.89	61.52	61.41	65.49	67.44	
	✓	72.07	63.97	69.09	67.42	74.53	71.02	81.17	59.13	63.08	62.49	63.5	65.82	67.77	
LAViT	×	74.36	64.56	70.73	69.39	75.65	72.56	81.21	59.33	64.91	64.22	63.23	66.64	68.93	
	✓	75.12	65.49	71.57	70.43	76.73	73.62	81.38	60.33	65.3	62.49	62.29	66.42	69.24	

Table 1: Experimental results (%) on the MUSIC-AVQA test split. EXIST, LOC, CNT, COMP, and TEMP, which are question types, denote “Existential”, “Location”, “Counting”, “Comparative”, and “Temporal”, respectively. Avg. denotes the average accuracy.

Method	Audio QA				Visual QA				AVQA												All
	CNT		COMP		CNT		LOC		EXIST		LOC		CNT		COMP		TEMP		Avg.		
	H	T	H	T	H	T	H	T	H	T	H	T	H	T	H	T	H	T			
FCNLSTM	66.23	36.48	64.78	51.14	61.75	5.31	54.86	51.06	64.76	78.52	46.66	57.30	62.69	7.23	43.13	71.67	37.02	30.78	54.12		
+ MCCD	62.51	34.44	61.19	51.26	61.11	5.66	57.73	50.36	62.48	82.40	45.49	60.09	62.07	7.16	44.55	69.46	36.55	30.74	54.55		
CONVLSTM	70.22	41.14	67.50	52.93	62.11	9.17	53.44	49.88	60.08	84.82	46.46	59.90	56.52	8.18	43.29	72.52	41.54	45.12	55.20		
+ MCCD	68.38	41.58	68.39	52.1	61.46	9.56	54.17	50.33	59.61	83.11	55.29	56.52	59.13	7.82	45.31	72.7	41.26	45.4	55.74		
BiLSTM Attn	73.68	46.32	21.51	77.58	64.30	0.00	53.92	42.01	87.51	21.14	35.16	43.75	62.85	2.18	27.61	74.38	17.58	31.32	48.84		
+ MCCD	73.3	45.16	20.71	77.48	64.41	0.00	56.08	42.54	87.47	21.04	34.47	43.51	63.33	2.18	26.01	75.48	17.92	32.67	49.55		
HCAtn	61.67	41.63	59.09	47.14	56.52	9.20	67.01	53.16	66.57	61.13	37.05	42.48	59.53	12.48	48.81	60.12	33.82	39.26	51.90		
+ MCCD	62.50	41.43	58.89	47.42	56.65	8.85	67.31	52.92	66.82	59.87	38.25	42.53	59.38	12.42	57.39	52.01	32.84	39.55	52.29		
GRU	66.92	48.63	58.29	59.61	64.37	11.79	57.68	57.66	76.30	64.76	41.05	45.61	60.71	18.68	57.19	57.38	31.02	40.67	55.21		
+ MCCD	69.94	48.09	56.31	63.77	66.24	13.36	63.55	57.59	83.04	54.16	43.36	43.36	57.89	18.36	53.93	59.65	30.82	38.23	55.70		
MCAN	75.02	60.16	58.89	50.09	64.58	26.69	66.48	62.25	51.29	67.29	46.11	61.61	64.76	25.28	50.57	52.40	34.64	58.05	57.27		
+ MCCD	73.53	56.14	68.31	39.44	65.51	29.4	68.41	60.09	58.8	61.9	46.75	60.61	60.54	31.89	69.09	44.94	32.44	57.78	58.22		
HME	62.60	53.95	54.97	58.29	50.95	16.46	73.25	58.60	65.74	66.49	33.79	46.03	63.18	17.18	53.20	60.57	33.95	41.57	53.66		
+ MCCD	60.62	53.58	62.22	53.01	52.90	14.96	72.56	58.56	55.47	69.21	32.27	42.97	69.90	12.36	43.51	72.51	36.65	32.61	53.44		
PSAC	53.01	56.68	57.41	48.12	49.55	26.43	72.96	60.69	50.56	55.54	41.98	52.30	56.70	19.58	38.13	58.92	26.68	46.24	50.45		
+ MCCD	55.14	52.26	64.7	44.45	52.34	22.15	72.06	60.7	58.97	52.35	41.18	49.78	53.28	18.85	42.6	64.53	25.81	45.68	51.64		
AVSD	54.00	47.84	60.61	47.79	60.34	10.07	74.78	61.43	66.28	61.98	33.00	40.35	46.21	8.06	51.98	66.00	40.14	41.52	52.33		
+ MCCD	55.87	40.18	65.41	48.05	63.32	7.41	73.78	58.2	74.74	70.8	37.85	34.55	35.53	6.11	49.96	67.88	44.03	43.89	53.09		
LAViT	50.57	43.45	50.78	44.93	47.28	15.50	67.19	65.51	52.37	22.04	44.35	61.69	52.21	21.52	45.61	40.49	35.00	49.33	47.40		
+ MCCD	45.05	45.09	57.33	41.26	48.62	17.00	69.91	65.90	60.61	29.57	43.17	57.57	53.92	22.09	54.46	35.35	33.99	49.40	48.91		

Table 2: Experimental results (%) on the MUSIC-AVQA-R test split. The question types, such as CNT and COMP, are introduced in Table 1. H and T denote the head and tail accuracy.