

Results

Table 1: Training Losses

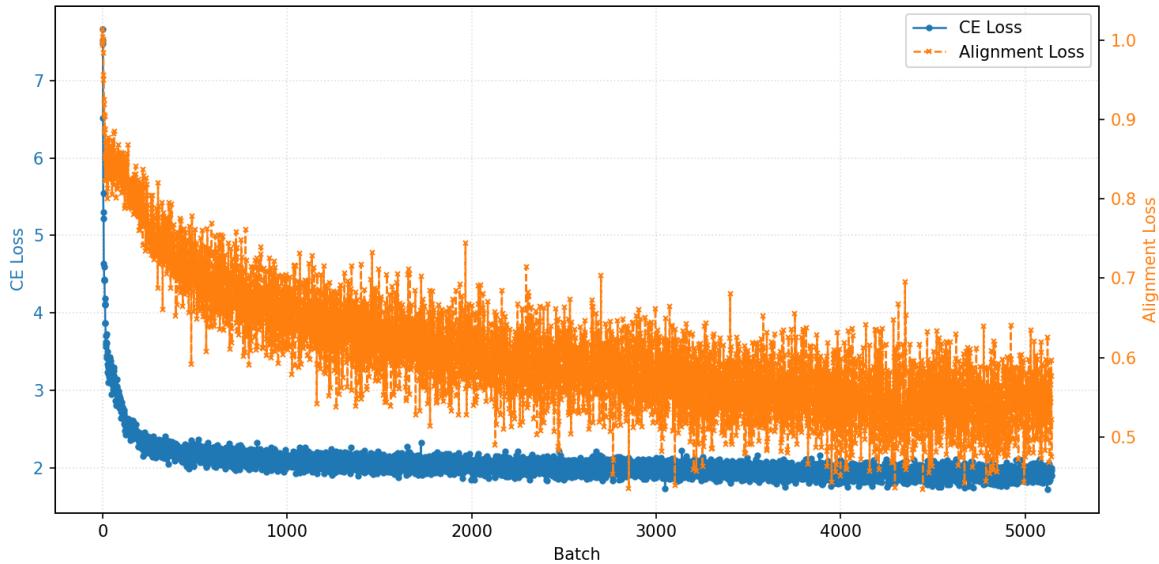
	CE Loss	Alignment Loss
First Stage	2.050	0.522
Second Stage	0.820	—

Dataset	Model	Perception Score	Cognition Score	LLaVA Baseline
mme		293.2 ↓	1459.4 ↓	348.2/1510.8
Dataset	Model	Exact Match	stderr	LLaVA Baseline
ai2d		0.5521 ↑	0.009	0.548
scienceqa_img		0.6891 ↓	0.0103	0.704
gqa		0.6189 ↓	0.0043	0.620
textvqa_val		0.5174	0.0068	?
Dataset	Model	Accuracy		LLaVA Baseline
mmmu_val		0.3611 ↑		0.353
Dataset	Model	Accuracy	F1 Score	LLaVA Baseline
pope		0.8616	0.8500	?

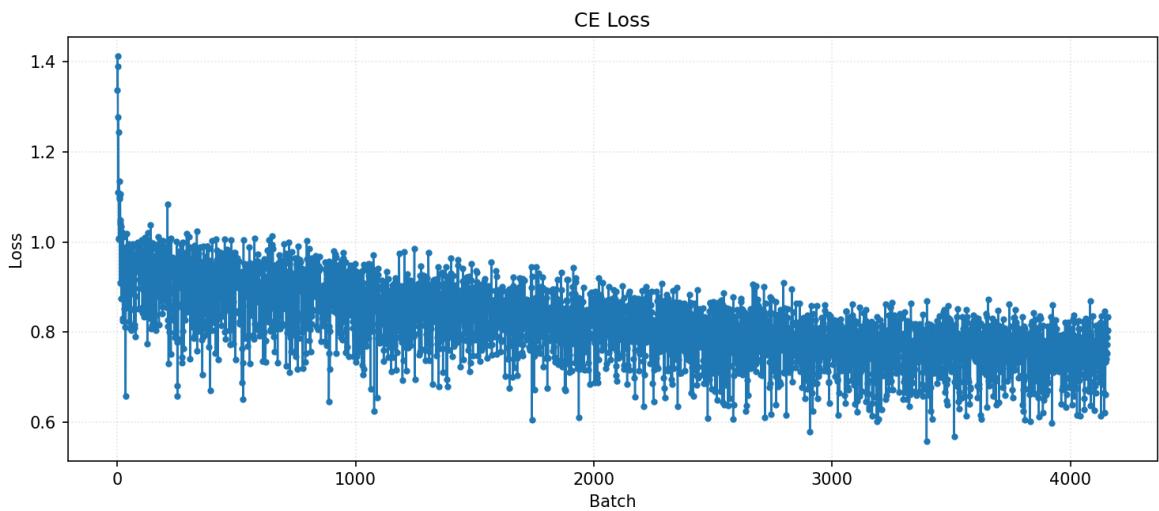
Table 2: Evaluation Results

Dataset	Model	CHAIR↓	Cover↑	Hal↓	Cog↓
Amber	LLaVA-v	10.1 ↓	51.6 ↑	44.8 ↓	5.2 ↓
Amber	LLaVA Baseline	3.0	46.6	14.7	1.3

Table 3: Hallucination Results



(a) First Stage Losses



(b) Second Stage Losses