

RUCIR at NTCIR-14 STC-3 Task

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1 Task Introduction

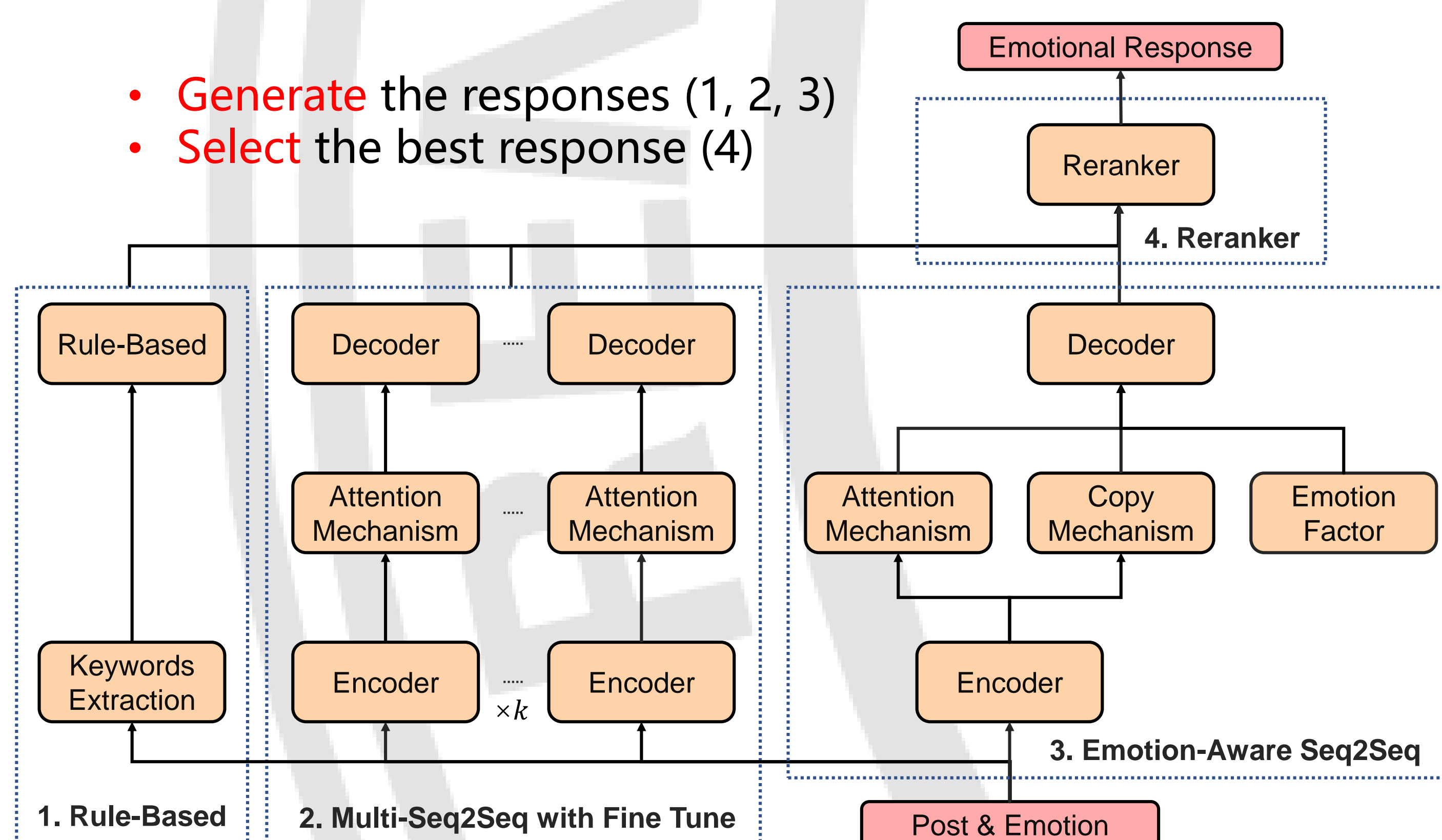
Chinese Emotional Conversation Generation

- **Input:** post & emotion category
{Like, Happiness, Anger, Disgust, Sadness, Other}
- **Output:** response (with fluency and coherence & emotional consistency)

Post (Given)	Emotion (Given)	Response (to be Generated)
爱狗还会做饭的男人，最帅了！ The man who cooks and loves dogs is very handsome!	喜欢 Like	会做饭的男人是很帅的啊。 The man who cooks is handsome.
爱狗还会做饭的男人，最帅了！ The man who cooks and loves dogs is very handsome!	悲伤 Sadness	好伤心，我没遇到过这样的男人。 So sad, I have never met such a man.

2 Model Architecture

- **Generate** the responses (1, 2, 3)
- **Select** the best response (4)



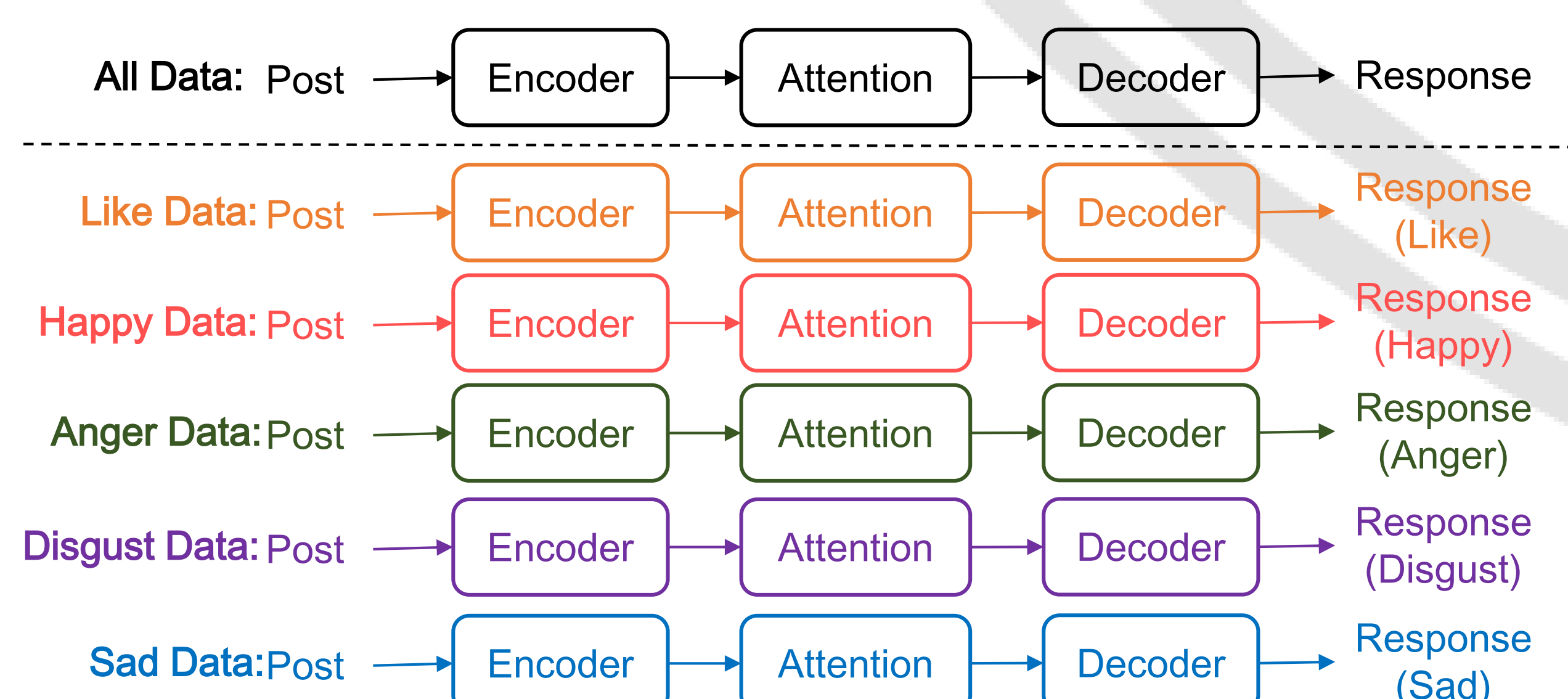
2.1 Rule-Based Method

- Fill the **keyword** into the proper constructed **template**

Post	海南游是破灭了[怒][怒][怒] Hainan tour is ruined [angry] [angry] [angry]
高兴 Happiness	想到 海南 就很开心 I am very happy when I think of Hainan .
悲伤 Sadness	海南 伤透了我的心 Hainan broke my heart

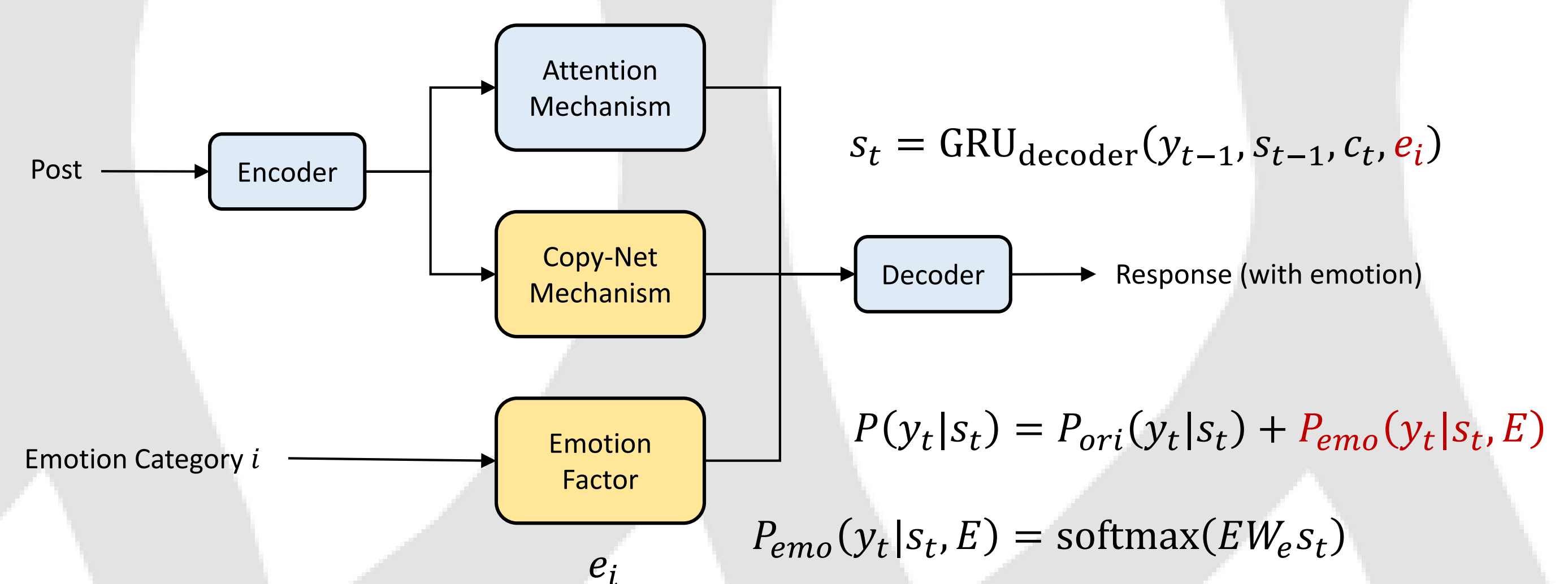
2.2 Multi-Seq2Seq with Fine Tune

- Employ **Multi-Seq2Seq with Fine Tune** for Every Emotion
- Multi-Seq2Seq: One Model for One Emotion Category



2.3 Emotion-Aware Seq2Seq

- Introduce Emotion Factor by **Emotion Embedding** (e_i)
- Increase the **Probability of Emotional Word** by Adding Copy Probability on **Emotion Dictionary** (E) Built by Clustering



2.4 Re-Ranker

- **Output:** response (fluency & coherence & emotional consistency)

Post	Emotion Score & Term Similarity	Rank
你看上去不太好。 You don't look very good.		
悲伤 Sadness	我昨晚 失眠 了。 I lost sleep last night.	×
悲伤 Sadness	昨晚 失眠 了，我好 难过 。 I was so sad about insomnia last night.	✓
我 获奖 了。 I won the prize.		
高兴 Happiness	我非常 开心 和 激动 。 I am so happy and excited.	×
高兴 Happiness	我为你 获奖 而感到 开心 。 I am very happy that you won the prize.	✓

3 Experiment Result

We achieve best performances in overall results and four of five emotion-specific results. (RUCIR_1: Whole Model; RUCIR_2: Emotion-Aware Model)

Table 1. Official CECG subtask results of the overall score and average score

Team Name	Label 0	Label 1	Label 2	Total	Overall Score	Average Score
1191_1	581	320	99	1,000	518	0.518
1191_2	831	109	60	1,000	229	0.229
AINTPU_1	716	200	84	1,000	367	0.336
CKIP_1	845	29	126	1,000	281	0.281
CKIP_2	840	28	132	1,000	292	0.292
IMTKU_1	580	248	172	1,000	592	0.592
IMTKU_2	954	32	14	1,000	60	0.060
TMUNLP_1	777	126	97	1,000	320	0.320
TUA1_1	443	293	264	1,000	821	0.821
TUA1_2	454	278	268	1,000	814	0.814
WUST_1	601	211	188	1,000	587	0.587
WUST_2	999	0	1	1,000	2	0.002
TKUIM_2	507	260	233	1,000	726	0.726
RUCIR_1	392	263	345	1,000	953	0.953
RUCIR_2	460	342	198	1,000	738	0.738

Table 2. Top 3 runs of official emotion-specific results on each emotion

Emotion Category	Team Name	Label 0	Label 1	Label 2	Total	Overall Score	Average Score
Like	RUCIR_1	88	36	76	200	188	0.940
	RUCIR_2	96	44	60	200	164	0.820
	TKUIM_2	90	56	54	200	164	0.820
Sad	RUCIR_1	72	48	80	200	208	1.040
	TUA1_1	84	31	85	200	201	1.005
	RUCIR_2	83	57	60	200	177	0.885
Disgust	RUCIR_1	71	76	53	200	182	0.910
	TUA1_2	92	82	26	200	134	0.670
	TUA1_1	82	105	13	200	131	0.655
Anger	RUCIR_1	88	63	49	200	161	0.805
	TKUIM_2	112	45	43	200	131	0.655
	TUA1_2	85	107	8	200	123	0.615
Happy	TUA1_2	76	25	99	200	223	1.115
	TUA1_1	71	36	93	200	222	1.110
	RUCIR_1	73	40	87	200	214	1.070