# TUA1 at the NTCIR-16 DialEval-2 Task

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## Introduction – Task Definition



## Methodology – Model overview



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Methodology – Dialogue Quality
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## Methodology – Nugget Detection





Table 1: Results for Chinese Dialogue Quality Prediction.

Run	Score type	Mean RSNOD	Mean NMD
0	A-score	0.2154	0.1474
1	A-score	0.2092	0.1369
2	A-score	0.1992	0.1325
0	S-score	0.1884	0.1305
1	S-score	0.1840	0.1159
2	S-score	0.1758	0.1166
0	E-score	0.1545	0.1136
1	E-score	0.1647	0.1222
2	E-score	0.1671	0.1310

Table 2: Results for English Dialogue Quality Prediction.

Run	Score type	Mean RSNOD	Mean NMD
0	A-score	0.1967	0.1327
0	S-score	0.1855	0.1214
0	E-score	0.1742	0.1360

#### Table 3: Results for Nugget Detection.

Run	Language Type	Mean JSD	Mean RNSS
0	Chinese	0.0700	0.1780
1	Chinese	0.2909	0.3939
0	English	0.0728	0.1830

## **Experiments** - Parameters

#### Table 5: Results for different unfreeze layers.

unfreeze layers	Score_sum	
none	13.37	
pooler	14.14	
pooler & layer.11	16.14	
pooler & layer.10-11	16.27	
pooler & layer.9-11	15.96	
pooler & layer.8-11	13.86	
pooler & layer.6-11	13.77	
all	1	

#### Table 6: Results for different topic numbers.

Topic Numbers	Score_sum	
5	15.37	
10	16.27	
20	16.11	
50	15.79	

Table 4: Results for different pre-trained Transformer models.

Chinese_model	English_model	Score_sum
bert-base-chinese	-	13.37
Chinese-bert	-	14.59
bert-base-chinese	bert-base-cased	14.56
chinese-roberta-base	roberta-base	16.14
roberta-base-finetuned-jd	roberta-base	16.27



Торіс			Topic Words		
1	Mobile phone	Hammer	Technology	Hello	Question
2	Mobile phone	Download	Vivo	Hello	Software
3	China Telecom	Broadband	Hello	Telecom	Private message
4	4G	Support	Thanks	Network	User
5	China Unicom	Hello	Service	Unicom	123456789
6	Youbao	Machine	Vending machine	Serial number	Drinks
7	China Unicom	Hello	Unicom	Signal	Question
8	Phone number	Question	Hello	Thanks	Solve
9	91	LeTV	Helper	Software	Mobile phone
10	China Unicom	Hello	Question	Thanks	Reply

"id": "4276198835786595",

"sender": "customer", "I newly applied mobile phone card of Unicom. It cannot be used on non-4g mobile phones and has no signal. The old card can be used..."

"sender": "helpdesk", "Hello, regarding the situation you have reported, please provide your Unicom number... Thank you!"



### **Our contributions:**

- ✓ A novel and effective architecture for Dialogue Quality and Nugget Detection tasks.
- ✓ The best scores for RSNOD and NMD metrics in both Chinese and English Dialogue Quality subtasks.

## Future works:

- Extend stop words library, such as "123456789".
- > Further study the effect of different Transformer levels.

# Thank you!