

```
!pip install -q google-generativeai evaluate rouge_score --no-deps
```

```
import google.generativeai as genai
import json
from tqdm import tqdm
import evaluate
import pandas as pd
from google.colab import files
```

```
uploaded = files.upload()
file_name = list(uploaded.keys())[0]
```



عدد الملفات: ٢ اختيار الملفات

- **cleaned\_data.json**(application/json) - 166260 bytes, last modified: 24100% - 2025/4/ done
- **colab\_gpu\_limited\_100 1 .json**(application/json) - 166490 bytes, last modified: 24100% - 2025/4/ done

```
Saving cleaned data.json to cleaned data (1).json
```

Saving colab\_gpu\_limited\_100 1 .json to colab\_gpu\_limited\_100 1 (1).json

```
with open(file_name, "r") as f:
    data = json.load(f)
```

```
api_key = "██████████████████████████████████████"  
genai.configure(api_key=api_key)  
model = genai.GenerativeModel("gemini-1.5-flash")
```

```
bleu_metric = evaluate.load("bleu")
rouge_metric = evaluate.load("rouge")
```

```
prompt_templates = [
    lambda q: f"You are a kind assistant. Please provide an empathetic answer to: {q}",
    lambda q: f"As a licensed therapist, give a supportive response to this: {q}",

```

```
lambda q: f"You are a thoughtful AI trained on mental health conversations. The user says: {q}\nRespond:"
]

results = []
for i, prompt_func in enumerate(prompt_templates):
    print(f"Evaluating with Prompt Style {i+1}...")
    predictions, references = [], []

    for sample in tqdm(data):
        question = sample["question"]
        expected_answer = sample["answer"]
        prompt = prompt_func(question)

        try:
            response = model.generate_content(prompt)
            prediction = response.text.strip()
        except:
            prediction = ""

        if prediction:
            predictions.append(prediction)
            references.append([expected_answer])

    formatted_predictions = [' '.join(p.split()) for p in predictions]
    formatted_references = [[' '.join(r[0].split())] for r in references]

    if formatted_predictions:
        bleu_score = bleu_metric.compute(predictions=formatted_predictions, references=formatted_references)
    else:
        bleu_score = {"bleu": 0.0}

    rouge_score = rouge_metric.compute(
        predictions=formatted_predictions,
        references=formatted_references,
        rouge_types=["rouge1", "rouge2", "rougeL"]
    )
```

```
results.append({  
    "prompt_style": i + 1,  
    "BLEU": bleu_score["bleu"],  
    "ROUGE-1": rouge_score["rouge1"],  
    "ROUGE-2": rouge_score["rouge2"],  
    "ROUGE-L": rouge_score["rougeL"]  
})
```



Evaluating with Prompt Style 1...

```
15%|██████| 15/100 [00:39<03:49, 2.70s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
16%|██████| 16/100 [00:39<02:52, 2.06s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
18%|██████| 18/100 [00:40<01:46, 1.30s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
20%|██████| 20/100 [00:41<01:12, 1.10it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
22%|██████| 22/100 [00:42<00:54, 1.43it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
24%|██████| 24/100 [00:43<00:43, 1.73it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
25%|██████| 25/100 [00:48<02:08, 1.71s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
26%|██████| 26/100 [00:48<01:40, 1.36s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
27%|██████| 27/100 [00:49<01:20, 1.11s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
28%|██████| 28/100 [00:49<01:07, 1.07it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
29%|██████| 29/100 [00:50<00:56, 1.25it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
30%|██████| 30/100 [00:50<00:50, 1.38it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
31%|██████| 31/100 [00:51<00:45, 1.53it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
32%|██████| 32/100 [00:51<00:42, 1.62it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
34%|██████| 34/100 [00:52<00:36, 1.79it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
35%|██████| 35/100 [00:53<00:35, 1.81it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
37%|██████| 37/100 [00:56<01:09, 1.11s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
38%|██████| 38/100 [00:57<00:59, 1.04it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
39%|██████| 39/100 [00:57<00:49, 1.24it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
40%|██████| 40/100 [00:58<00:43, 1.37it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
41%|██████| 41/100 [00:59<00:39, 1.48it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
42%|██████| 42/100 [00:59<00:35, 1.62it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
43%|██████| 43/100 [01:00<00:33, 1.73it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
44%|██████| 44/100 [01:00<00:30, 1.84it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
45%|██████| 45/100 [01:01<00:29, 1.84it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
46%|██████| 46/100 [01:01<00:28, 1.93it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
47%|██████| 47/100 [01:01<00:26, 2.02it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
64%|██████| 64/100 [01:45<01:46, 2.95s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
65%|██████| 65/100 [01:46<01:18, 2.25s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
67%|██████| 67/100 [01:47<00:45, 1.38s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
70%|██████| 70/100 [01:51<00:40, 1.35s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
71%|██████| 71/100 [01:52<00:39, 1.36s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
72%|██████| 72/100 [01:53<00:31, 1.11s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
73%|██████| 73/100 [01:53<00:25, 1.08it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
75%|██████| 75/100 [01:54<00:17, 1.44it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
```

```
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.76%|██████| 76/100 [01:55<00:15, 1.56it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
77%|██████| 77/100 [01:55<00:13, 1.68it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
78%|██████| 78/100 [01:56<00:12, 1.75it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
80%|██████| 80/100 [01:57<00:10, 1.85it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.81%|██████| 81/100 [01:57<00:10, 1.88it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
82%|██████| 82/100 [01:58<00:09, 1.95it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
83%|██████| 83/100 [01:58<00:08, 2.04it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
84%|██████| 84/100 [01:59<00:07, 2.01it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
85%|██████| 85/100 [01:59<00:07, 2.09it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
86%|██████| 86/100 [02:00<00:06, 2.08it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
87%|██████| 87/100 [02:00<00:06, 2.04it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
89%|██████| 89/100 [02:02<00:06, 1.75it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
90%|██████| 90/100 [02:02<00:05, 1.85it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
91%|██████| 91/100 [02:02<00:04, 1.96it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
92%|██████| 92/100 [02:03<00:03, 2.05it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
100%|██████| 100/100 [02:26<00:00, 1.46s/it]
```

Evaluating with Prompt Style 2...

```
9%|██████| 9/100 [00:23<04:04, 2.69s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
10%|██████| 10/100 [00:23<03:02, 2.02s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
11%|██████| 11/100 [00:24<02:19, 1.57s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
13%|██████| 13/100 [00:25<01:28, 1.02s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.14%|██████| 14/100 [00:25<01:14, 1.15it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
15%|██████| 15/100 [00:26<01:05, 1.30it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
16%|██████| 16/100 [00:26<00:57, 1.46it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
17%|██████| 17/100 [00:27<00:52, 1.58it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
18%|██████| 18/100 [00:27<00:48, 1.68it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
19%|██████| 19/100 [00:28<00:46, 1.75it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
20%|██████| 20/100 [00:28<00:44, 1.80it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
21%|██████| 21/100 [00:29<00:42, 1.87it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
22%|██████| 22/100 [00:29<00:41, 1.89it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
23%|██████| 23/100 [00:30<00:41, 1.85it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
24%|██████| 24/100 [00:30<00:39, 1.93it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
25%|██████| 25/100 [00:31<00:38, 1.93it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
26%|██████| 26/100 [00:31<00:38, 1.93it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
27%|██████| 27/100 [00:32<00:36, 2.03it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
28%|██████| 28/100 [00:32<00:34, 2.07it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
30%|██████| 30/100 [00:33<00:33, 2.10it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
31%|██████| 31/100 [00:34<00:34, 2.02it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.49%|██████| 49/100 [01:18<01:37, 1.90s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
```

```

50%|██████| 50/100 [01:19<01:14, 1.50s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
51%|██████| 51/100 [01:19<00:58, 1.20s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
52%|██████| 52/100 [01:22<01:19, 1.66s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
53%|██████| 53/100 [01:22<01:02, 1.32s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
54%|██████| 54/100 [01:23<00:49, 1.08s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
55%|██████| 55/100 [01:23<00:40, 1.10it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
56%|██████| 56/100 [01:24<00:34, 1.27it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
57%|██████| 57/100 [01:24<00:29, 1.46it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
58%|██████| 58/100 [01:25<00:26, 1.60it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
59%|██████| 59/100 [01:25<00:23, 1.71it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
60%|██████| 60/100 [01:26<00:22, 1.78it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
61%|██████| 61/100 [01:26<00:21, 1.82it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
62%|██████| 62/100 [01:27<00:20, 1.83it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
63%|██████| 63/100 [01:27<00:19, 1.89it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
65%|██████| 65/100 [01:28<00:18, 1.91it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
66%|██████| 66/100 [01:29<00:17, 1.92it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
67%|██████| 67/100 [01:30<00:17, 1.93it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
69%|██████| 69/100 [01:30<00:15, 2.05it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
70%|██████| 70/100 [01:31<00:14, 2.05it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
72%|██████| 72/100 [01:32<00:14, 1.97it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
73%|██████| 73/100 [01:32<00:13, 1.99it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
74%|██████| 74/100 [01:33<00:12, 2.00it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
75%|██████| 75/100 [01:33<00:12, 2.05it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?%24alt=json%3Benum-encoding%3Dint (127.
76%|██████| 76/100 [01:34<00:11, 2.02it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
77%|██████| 77/100 [01:34<00:11, 2.01it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
78%|██████| 78/100 [01:35<00:10, 2.02it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
79%|██████| 79/100 [01:35<00:10, 2.09it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
96%|██████| 96/100 [02:26<00:13, 3.29s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
97%|██████| 97/100 [02:26<00:07, 2.44s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
98%|██████| 98/100 [02:27<00:03, 1.87s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
99%|██████| 99/100 [02:27<00:01, 1.44s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera
100%|██████| 100/100 [02:27<00:00, 1.48s/it]

```

Evaluating with Prompt Style 3...

```

0%|          | 0/100 [00:00<?, ?it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generateContent?
2%|          | 2/100 [00:00<00:46, 2.09it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
3%|          | 3/100 [00:01<00:46, 2.07it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
4%|          | 4/100 [00:02<00:51, 1.87it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generat
5%|          | 5/100 [00:02<00:50, 1.86it/s]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generate
6%|          | 6/100 [00:06<02:32, 1.62s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:generate
22%|███      | 22/100 [00:53<02:57, 3.09s/it]WARNING:tornado.access:429 POST /v1beta/models/gemini-1.5-flash:genera

```



```
df = pd.DataFrame(results)
print(df)
df
```

```
↩
```

|   | prompt_style | BLEU     | ROUGE-1  | ROUGE-2  | ROUGE-L  |
|---|--------------|----------|----------|----------|----------|
| 0 | 1            | 0.050438 | 0.396956 | 0.100900 | 0.188519 |
| 1 | 2            | 0.064564 | 0.417648 | 0.114968 | 0.191397 |