

Supplementary Materials for Paper 3441: Simulating Human-Like Counseling: A Path- and Scenario-Guided Framework for Psychological Support Dialogue

Yuanchen Shi^{1,2}, Longyin Zhang³, Maodong Li^{1,2}, Yibin Zheng^{1,2}, Xiuhong Wang⁴, Fang Kong^{1,2*}

¹School of Computer Science and Technology, Soochow University

²Jiangsu Key Lab of Language Computing, Suzhou 215123, China

³Aural & Language Intelligence, A*STAR Institute for Infocomm Research

⁴Institute of Science and Technology Information, Jiangsu University

20227927002@stu.suda.edu.cn, zhang_longyin@a-star.edu.sg, 20254027002@stu.suda.edu.cn,

20234227027@stu.suda.edu.cn, xiuhongwang@ujs.edu.cn, kongfang@suda.edu.cn

Implementation Details

For each response in CPsDD and ESConv, we construct instances based on its strategy, textual content, and dialogue history (excluding initial greetings), resulting in a total of 0.7M samples.

We adopt the latest CKPI benchmark protocol on ESConv for comparison.

In PGSim, Generator and Modifier are fine-tuned for 10 epochs, using 3 NVIDIA GeForce RTX 3090 GPUs.

In CADSS, the Planner, Profiler and Supporter are fine-tuned for 2 epochs on the train set with a batch size of 2 and a learning rate of 1e-5, using 3 NVIDIA GeForce RTX 3090 GPUs, respectively. We fine-tune LLMs with the Low-Rank Adaption (LoRA).

For Qwen2.5-7B, we directly use the same prompt as the Supporter, removing the step of the Planner planning the response strategy.

For CKPI, we replace its pre-trained language model with bart-large-chinese¹ and ignore the English knowledge graph, with other steps remaining consistent with the paper.

For EmoLLM, we use the Qwen2-7B-Instruct version².

For MindChat, we use the MindChat-Qwen-7B-v2 version³.

For GPT-4o and DeepSeek-v3, which require paid APIs, we randomly select 2000 samples from the test set and called their respective APIs for the experiment. We use the same prompt as our Supporter. Perplexity cannot be measured when calling their APIs.

Notably, the mental LLMs do not provide explicit strategy annotations, which prevents them from conducting the Strategy Prediction task.

Limitations

Due to hardware limitations, we have not conducted experiments with larger LLMs such as Llama-3.3-70B and Qwen2.5-72B, although we believe these models would perform better under our framework and methodology.

Furthermore, most existing methods for Emotional Support Conversation (ESC) task are designed for English datasets, and many models incorporate steps like extracting English knowledge graphs such as COMET, which are not applicable to our dataset. As a result, it is not possible to fully replicate the performance of these outstanding models.

Ethical Considerations

Our work involves sensitive psychological counseling data and the development of a dialogue system intended to provide psychological support. We have taken several measures to address ethical risks and ensure responsible research:

User Privacy and Consent: All real-world counseling dialogues used for data construction were fully anonymized, with all personally identifiable information removed. Informed consent was obtained from all users prior to data collection, and data storage and processing followed strict privacy protection protocols.

Expert Review and Data Appropriateness: All collected and generated dialogues were reviewed and, where necessary, modified by certified psychological experts to ensure appropriateness, factual accuracy, and to prevent any harmful, misleading, or stigmatizing statements. Special attention was given to avoid sensitive or triggering content, especially regarding self-harm or suicide.

Bias and Representativeness: While our dataset covers a wide range of user groups and psychological issues, it may still reflect the biases of the population, the experts, or the LLMs involved in data generation and annotation. We strive for diversity in user groups and problem types, but acknowledge that model outputs may be less suitable for groups or issues not well represented in the data.

Model Limitations and Safe Usage: CADSS is designed as a research system for psychological support dialogue modeling and is not a substitute for professional mental health care. We strongly caution against the use of this system as

*Corresponding author

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¹<https://huggingface.co/fnlp/bart-large-chinese>

²https://www.modelscope.cn/models/aJupyter/EmoLLM_Qwen2-7B-Instruct_lora/

³<https://huggingface.co/X-D-Lab/MindChat-Qwen-7B-v2>

a sole resource in crisis situations or for diagnosis. All deployment or integration into real-world applications should include clear disclaimers, human supervision, and referral mechanisms to professional services when needed.

Transparency and Feedback: We will make the dataset and models publicly available for research, following relevant ethical guidelines and review. We encourage the research community to provide feedback, report issues, and contribute to improving the safety, inclusivity, and reliability of psychological support dialogue systems.

CADSS ChatBot Deployment

We deployed the Planner, Profiler, Summarizer, and Supporter components of CADSS on separate NVIDIA GeForce RTX 3090 GPUs, and the system interacts with users by calling the CADSS API based on user input through a webpage. Detailed example screenshots of users chatting with CADSS on the webpage can be found in Figure 13 and Figure 14. English translations of these chat examples are shown in Figure 15 and Figure 16, respectively. Due to potential exposure of location information, we will publish the CADSS ChatBot website after the paper is accepted, following the anonymity policy.

Group	Problem	Cause	Strategy Path	Support Focus
Orphans	Depression	Childhood trauma	Greeting → Comforting and Encouraging → Book Recommendation → Guiding Question → Suggested Methods → Closing Language	Sense of belonging
College Students	Depression	Lost love	Greeting → Comforting and Encouraging → Music Recommendation → Guiding Question → Suggested Methods → Closing Language	Love and mate selection
Middle-aged and Elderly	Depression	Work pressure	Greeting → Guiding Question → Suggested Methods → Movie Recommendation → Comforting and Encouraging → Closing Language	Sense of power
Prisoners	Depression	Childhood trauma	Greeting → Guiding Question → Movie Recommendation → Comforting and Encouraging → Suggested Methods → Closing Language	Sense of power
Children	Depression	Childhood trauma	Greeting → Comforting and Encouraging → Music Recommendation → Suggested Methods → Guiding Question → Closing Language	Sense of security

Table 1: Examples illustrating how the same psychological problem (**Depression**) may require different dialogue strategies and support focus depending on the cause and user group.

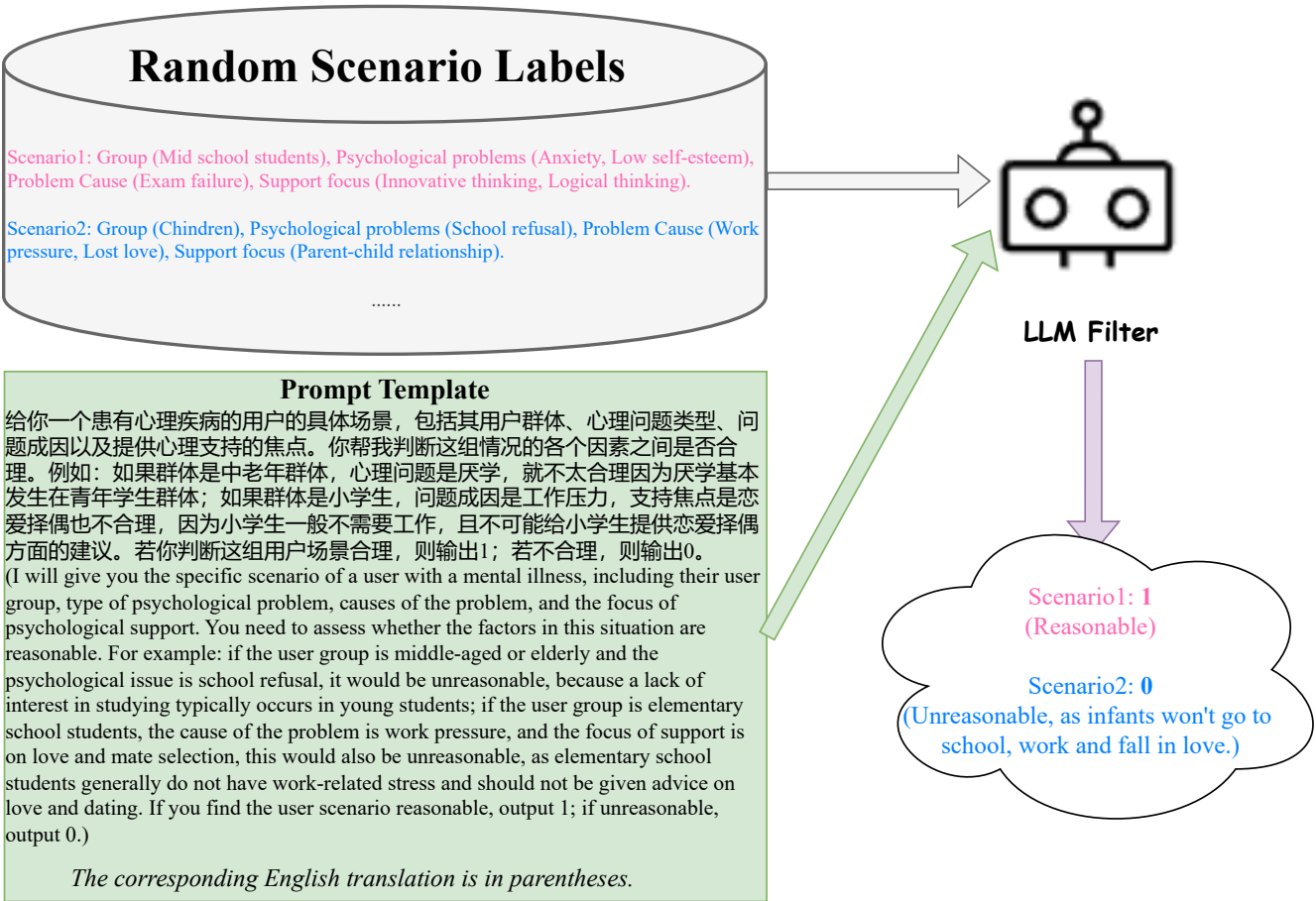


Figure 1: LLM Filter for filtering out unreasonable user situations.

Metrics	Standard
Helpfulness	Whether the system provides substantial help to the user in the dialogue.
Understanding	Whether the system comprehensively understands the user's issues and situation.
Consistency	Whether the dialogue content is consistent with the situation description.
Coherence	Whether the dialogue content flows coherently.
Informativeness	Whether the dialogue provides sufficient information and rich content.
Empathy	Whether the system demonstrates enough sympathy and empathy to comfort the user.
Overall Quality	Overall quality of the dialogue considering all aspects.

Table 2: Specific definition of metrics for human evaluation.

Prompt Template

你是一个心理对话生成师，根据我给你的用户场景，模仿下面的同群体用户的心理咨询对话例子，按照同样的格式以及所给的对话路径，生成一段用户和系统之间的心理咨询对话。系统需要以提供心理支持缓解用户心理问题为首要目的，并且每次系统回复参考给定对话路径中的每一步回复策略一步一步推进对话。例子为：*对话样例*；对话路径为：*路径样例*。需要你生成对话的用户场景：*场景*

(You are a psychological dialogue generator. Based on the user scenario I provide, mimic the psychological counseling dialogue example from the same group of users, following the same format and the dialogue path I give. Generate a segment of dialogue between the user and the system. The system's primary goal is to provide psychological support to alleviate the user's psychological problems. Each time the system responds, it should follow the response strategy step by step according to the given dialogue path. Here's an example: *A sample dialogue*; *A sample path*). Generator a dialogue according to: *Scenario*

The corresponding English translation is in parentheses.

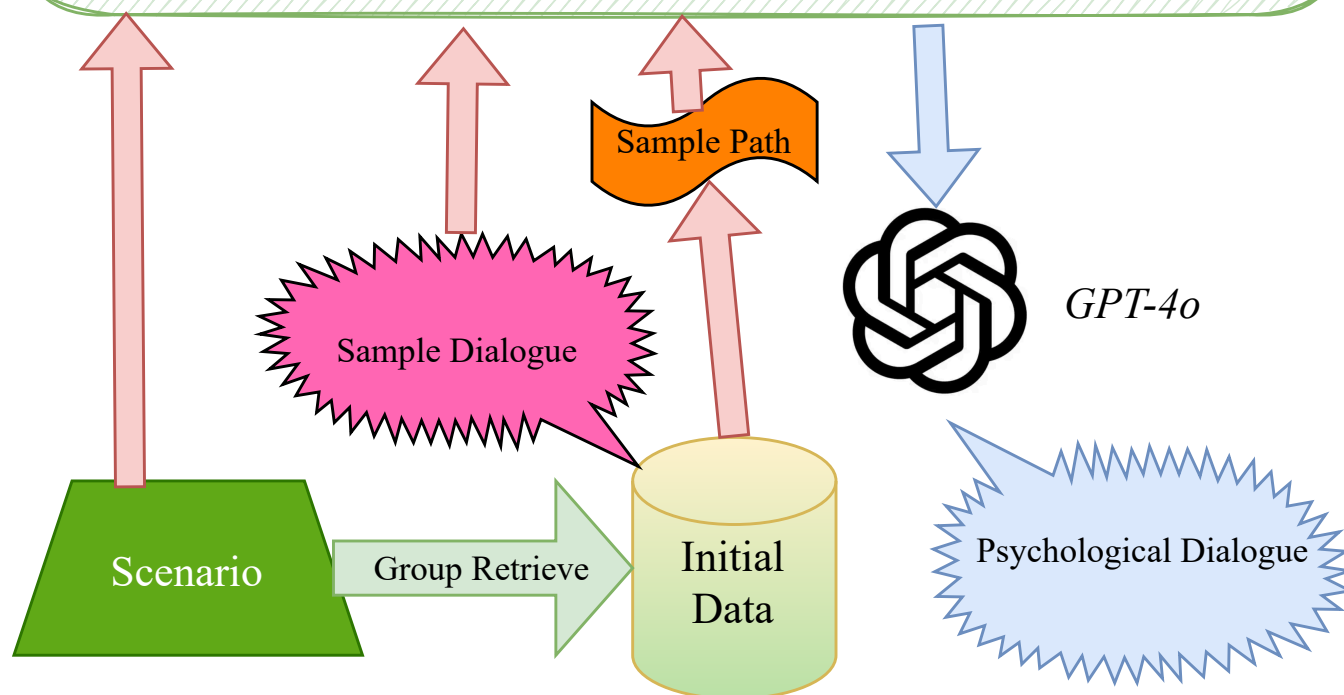


Figure 2: Detailed process and CoT example for generating psychological dialogues using GPT-4o.

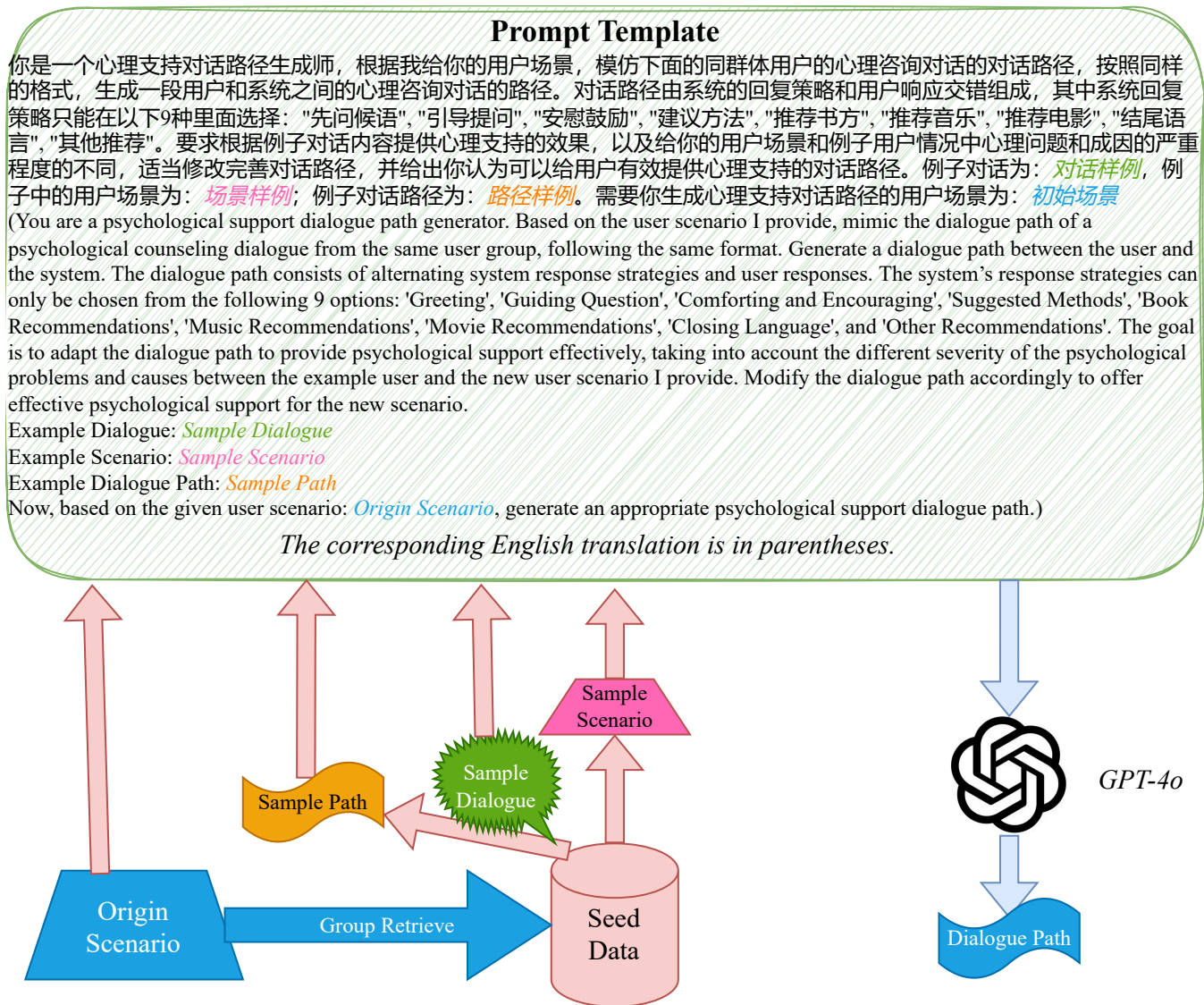


Figure 3: Detailed process and CoT example for generating psychological dialogue paths using GPT-4o.

Metrics	Standard
Helpfulness	Whether the model provides substantial help to solve the user's problem.
Understanding	Whether the model comprehensively understands the user's issues and situation.
Consistency	Whether the model response is consistent with the problems that the user's utterance reflects.
Coherence	Whether the model response flows coherently.
Informativeness	Whether the model response contains sufficient information and rich content.
Empathy	Whether the model demonstrates enough sympathy and empathy to comfort the user.
Overall Quality	Overall quality of the model response considering all aspects.

Table 3: Specific definition of metrics for manual voting.

Instruction template and an example for fine-tuning Dialog Generator

Instruction: 根据给你的用户场景和对话路径，生成一段心理咨询对话。用户场景包含用户的心里问题、问题成因和心理支持的焦点。对话路径由系统的一系列回复策略和用户响应穿插组成。要求对话路径体现在对话每一轮开头，以“（用户）用户响应：”或“系统（xxxx）”的格式，xxxx代表具体系统回复策略。要求对话每一轮都考虑到对话历史、情境以及当轮策略。（Generate a psychological counseling dialogue based on the user scenario and dialogue path provided to you. The user scenario includes the user's psychological problems, the causes of these problems, and the focus of psychological support. The dialogue path consists of a series of system response strategies interspersed with user responses. The dialogue path should be reflected at the beginning of each round of the conversation in the format of "(User) User Response:" or "System (xxxx)," where "xxxx" represents the specific system response strategy. Each round should take into account the conversation history, context, and the strategy for that round.)

Input: 用户场景为：#具体用户场景#；对话路径为：#具体对话路径#。（The user scenario is: #specific user scenario#, and the dialogue path is: #specific dialogue path#.)

Output: 一段心理咨询对话 (A psychological counseling dialogue)

Example:

Input: 用户场景为：群体-一般群体-中学生，心理问题（焦虑、自卑），问题成因（考试失败），支持焦点（创新思维、逻辑思维）；对话路径为：（系统）先问问候语→（用户）用户响应→（系统）安慰鼓励→（用户）用户响应→（系统）引导提问→（用户）用户响应→（系统）安慰鼓励→（系统）建议方法→（系统）引导提问→（用户）用户响应→（系统）安慰鼓励→（用户）用户响应→（系统）建议方法→（系统）推荐书方→（系统）推荐音乐→（系统）推荐电影→（系统）引导提问→（用户）用户响应→（系统）安慰鼓励→（系统）推荐书方→（系统）建议方法→（系统）结尾语言→（用户）用户响应。

(The user scenario is: Group - General Group - Middle School Students, Psychological problems (Anxiety, Low Self-Esteem), Problem Cause (Failure in Exams), Support Focus (Innovative Thinking, Logical Thinking). The dialogue path is: (System) Greeting → (User) User Response → (System) Comfort and Encouragement → (User) User Response → (System) Guiding Question → (User) User Response → (System) Comfort and Encouragement → (System) Suggested Methods → (System) Guiding Question → (User) User Response → (System) Comfort and Encouragement → (User) User Response → (System) Suggested Methods → (System) Recommended Books → (System) Recommended Music → (System) Recommended Movies → (System) Guiding Question → (User) User Response → (System) Comfort and Encouragement → (System) Recommended Books → (System) Suggested Methods → (System) Closing Remarks → (User) User Response.)

Output: （系统）先问问候语：你好，最近学习压力大吗？愿意和我聊一聊你的感受吗？（用户）用户响应：嗯，有点。我最近考试成绩不好，感觉自己特别没用。（系统）安慰鼓励：考试的确会给我们带来很大的压力，但成绩并不能完全定义你的价值。你已经在尽力了吗？（用户）用户响应：是的，我觉得自己已经很努力了，可是还是没考好，觉得对不起父母，也很去脸。（系统）引导提问：能和我说说，这次考试让你觉得最困难的地方是什么吗？有没有发现自己在复习时哪里需要改进？（用户）用户响应：数学题总是做不出来，我觉得自己的逻辑思维很差，可能脑子不够聪明吧。（系统）安慰鼓励：学习数学确实需要一些逻辑思维的训练，但这并不代表你的能力不够，只是需要找到适合你的学习方法。关键是要学习从考试失败中分析背后原因。有可能是学习方法不正确，在备考阶段常常以题海战术为主，忽视了学习的本质是理解和掌握知识点，需要有针对性地精选题目和学习策略。此外是缺乏学习效率，持久疲劳战。焦虑、睡眠不足，压力过大会使我们的的大脑受损，记忆力下降，情绪垃圾堆积，思维判断力受阻，从而严重影响学习效率。休息其实对学习是有帮助的，它能帮助你恢复精力，让大脑更有效率地运转。尤其是在高强度的学习中，适当的休息能够提升你的学习效果。（系统）建议方法：人脑具有强大的压力调节功能，特别是血清素的分泌，可极大地消解压力。然而，因为手机依赖、作息不规律、睡眠不足等，这种压力调节功能被严重削弱了。可尝试让自己有规律的作息时间，少使用电子产品等。会睡觉才会学习。合理分配学习时间，避免每次学得大长时间，适当休息，给大脑休息的时间。注意力不集中，压力太大，思虑太多，情绪失控……很多身心问题，是因为大脑累了，亟待保护和休息。通过睡眠大脑可以清洗白天学习产生的大量垃圾，同时睡眠的过程中，大脑中的海马回将短期记忆转化为长期记忆，从而提高记忆力，提升学习效率。（系统）引导提问：父母是怎么看待你的成绩的？他们有没有给你一些建议或支持？（用户）用户响应：他们没有责怪我，但总是希望我能考得更好，还说以后多学点创新的东西，不要只会死记硬背。可是我觉得自己不行，总是很笨。不知怎样才能走出目前的困境。（系统）安慰鼓励：父母的建议是希望你能更全面地发展，而不是单纯看成绩高低。其实，失败是成长的一部分，它可以帮助我们发现自己的不足，并找到改进的方向。（用户）用户响应：可是我每次想到考试就会很紧张，心里像压了一块石头一样。（系统）建议方法：考试焦虑是很多同学都会遇到的问题。你可以尝试在考试前做一些放松练习，比如深呼吸或者听听轻音乐，帮助自己缓解紧张情绪。请记住，越是紧绷的状态，学习效率越可能下降。放松不是浪费时间，而是为了更好的学习打基础。（系统）推荐书方：推荐阅读黄翔的《加油吧，大脑！》，该书可以帮助你排除大脑健康隐患，化解解郁情绪，用科学方法保养大脑，运用脑科学激发身心活力，释放焦虑，提升学习效果。此外，日本作家有田秀穗的《减压脑科学》，可帮助你甩掉压力性焦虑。密纳，《深度工作》这本书探讨如何在短时间内高效投入学习；《如何赢得心理战》可帮助管理学业压力和负面情绪。这些书或许会对你有所启发。此外，《如何学习：从未教过你的学习方法》可教你更高效地学习，同时增强你的自信心。（系统）推荐音乐：听一听《夏日天空》（Summer Sky），这种轻快的旋律能帮助你放松心情。（系统）推荐电影：推荐你看《当幸福来敲门》，它讲述了一个人在逆境中如何坚持并最终实现梦想的故事，也许能给你带来一些启发。（系统）引导提问：除了学习，你有没有一些自己喜欢的兴趣爱好？做这些事情时，你会不会感觉更轻松？（用户）用户响应：我喜欢画画，但最近都没心情动笔。（系统）安慰鼓励：创新是一场内心的转变，它始于对现状的不满，终于对美好未来的不懈追求。让我们在这场转变中，不断发现自我，塑造未来。画画是一个很好的放松方式，也能激发你的创新思维。或许你可以重新拾起画笔，把自己的情绪画出来，可能会感觉轻松很多。（系统）推荐书方：推荐阅读创新思维书单，其中大卫·罗布森的《思维的精进》汇集心理学、神经科学、哲学和人类学领域最尖端研究，给出了训练思维和智慧的一系列可行方法，通过阅读可帮助您建立避免偏见和谬误的认知框架。（系统）建议方法：您可以尝试做一些学习方法上的调整，试着规划一些放松的活动，比如运动、阅读或者多接触大自然。保证自己有一定的运动量。适当的运动可以缓解压力，还能让你的思维更加清晰。不如试着每周抽一个小时打打羽毛球，让身体和大脑都得到放松。运动可促进内啡肽的分泌，提升幸福感，同时运动后学习会提升大脑的记忆功能和学习效率。在繁忙的学习节奏中，合理规划运动部分，通过运动可以帮助我们释放焦虑、减轻压力、改善情绪、提升工作效率。通过阅读滋养人的心灵，提升认知，走出情绪困扰。规划出时间，让自己多接触大自然，花草树木，鸟语花香，山河景秀，蓝天白云，轻风细雨等，能够放松心情，有很好的疗愈效果。（系统）结尾语言：这次考试的结果并不能定义你未来的成就，失败是成长路上必经的过程。希望你可以通过慢慢调整自己的心态，相信自己有能力面对下一次挑战。如果愿意，我们可以继续聊聊你的学习和生活。（用户）用户响应：谢谢推荐和建议，我会试着调整自己的状态，不再一直否定自己。

(System) Greeting: Hello, has the study pressure been heavy recently? Would you like to talk about how you're feeling? **(User)** User Response: Hmm, a bit. My exam results weren't good recently, and I feel really useless. **(System)** Comfort and Encouragement: Exams can indeed bring a lot of pressure, but your results don't fully define your worth. Have you been trying your best? **(User)** User Response: Yes, I think I've been working really hard, but I still didn't do well. I feel like I've let my parents down, and I'm so embarrassed. **(System)** Guiding Question: Can you tell me, what was the most difficult part of this exam? Did you notice any areas in your review process where you could improve? **(User)** User Response: I always struggle with math problems. I feel like my logical thinking is really poor, maybe I'm just not smart enough. **(System)** Comfort and Encouragement: Studying math does require some logical thinking training, but that doesn't mean you're not capable. You just need to find a study method that works for you. The key is to analyze the reasons behind the exam failure. It could be that your study methods weren't effective, perhaps relying too much on doing tons of practice problems and neglecting that the essence of learning is to understand and master key concepts. You need to select problems and learning strategies more purposefully. Another possibility is that your study efficiency was lacking—long periods of fatigue, anxiety, lack of sleep, and excessive pressure can damage our brain, lower our memory, accumulate emotional stress, and hinder our judgment, all of which affect learning efficiency. Actually, resting is helpful for learning as it helps you restore energy and allows your brain to function more effectively. In high-intensity study periods, taking appropriate breaks can improve your learning results. **(System)** Suggested Methods: The human brain has a strong stress regulation function, particularly the secretion of serotonin, which can greatly reduce stress. However, because of smartphone dependence, irregular sleep patterns, and lack of sleep, this stress regulation function has been significantly weakened. Try to establish a regular schedule, reduce screen time, etc. Sleep is crucial for learning. Plan your study time reasonably, avoid studying for too long at a stretch, and take appropriate breaks to give your brain time to rest. Lack of concentration, high stress, overthinking, and emotional instability—many physical and mental issues stem from the brain being overworked and in need of rest. Sleep can help the brain clear the mental clutter from the day, and during sleep, the hippocampus transforms short-term memories into long-term ones, improving memory and enhancing learning efficiency. **(System)** Guiding Question: How do your parents view your results? Have they given you any advice or support? **(User)** User Response: They didn't blame me, but they always hope I can do better. They also said I should learn more about innovative things and not just memorize things. But I feel like I'm not capable, and I'm always so slow. I don't know how to get out of this situation. **(System)** Comfort and Encouragement: Your parents' advice is intended to help you develop more holistically, not just to focus on grades. Actually, failure is part of growth. It helps us identify our weaknesses and find ways to improve. **(User)** User Response: But every time I think about exams, I get really nervous. It feels like there's a stone weighing on my chest. **(System)** Suggested Methods: Exam anxiety is something many students experience. You could try doing some relaxation exercises before the exam, like deep breathing or listening to light music, to help ease your nerves. Remember, the more tense you are, the more your learning efficiency might decrease. Relaxation isn't a waste of time; it's laying the foundation for better learning. **(System)** Book Recommendations: I recommend reading "Go for It, Brain!" by Huang Xiang. This book helps eliminate brain health risks, relieve anxiety, and uses scientific methods to nourish the brain and stimulate mental vitality, releasing anxiety and improving learning outcomes. Additionally, "Stress Relief Brain Science" by Japanese author Hideho Arita can help you shed stress-induced anxiety. "Deep Work" by Cal Newport explores how to efficiently engage in study in a short time, and "How to Win the Psychological Battle" can help you manage academic pressure and negative emotions. These books may inspire you. Also, "How to Learn: The Learning Methods They Never Taught You" can teach you how to study more efficiently while boosting your confidence. **(System)** Music Recommendations: Try listening to "Summer Sky", a light melody that can help you relax. **(System)** Movie Recommendations: I recommend watching "The Pursuit of Happiness", which tells the story of how someone perseveres and ultimately achieves their dreams in the face of adversity. It might give you some inspiration. **(System)** Guiding Question: Besides studying, do you have any hobbies that you enjoy? Do you feel more relaxed when doing these activities? **(User)** User Response: I like drawing, but I haven't had the mood to pick up a pen recently. **(System)** Comfort and Encouragement: Innovation begins with dissatisfaction with the present and ends with the relentless pursuit of a better future. Let's discover ourselves and shape the future in this process of transformation. Drawing is a great way to relax and can stimulate your innovative thinking. Maybe you can pick up your pen again and draw your emotions; it might help you feel much lighter. **(System)** Book Recommendations: I recommend reading books on innovative thinking. For example, "The Art of Thinking" by David Robson brings together cutting-edge research from psychology, neuroscience, philosophy, and anthropology, offering practical methods for training the mind and enhancing intelligence. Reading this can help you build a cognitive framework to avoid biases and errors. **(System)** Suggested Methods: You can try adjusting your study methods by planning some relaxing activities, like exercising, reading, or spending more time in nature. Make sure to get enough exercise. Moderate exercise can relieve stress and clear your mind. Why not try playing badminton for an hour each week? It will help both your body and mind relax. Exercise promotes the release of endorphins, enhancing feelings of happiness, and learning after exercising boosts memory and study efficiency. In the midst of your busy study schedule, plan some time for exercise—it helps release anxiety, reduce stress, improve your mood, and boost efficiency. Reading nourishes the soul and enhances cognition, while spending time in nature—flowers, trees, birds, mountains, and fresh air—can relax your mind and provide therapeutic benefits. **(System)** Reading Language: The results of this exam do not define your future achievements. Failure is a necessary part of growth. I hope you can slowly adjust your mindset and believe that you are capable of facing the next challenge. If you'd like, we can continue talking about your studies and life. **(User)** User Response: Thank you for the recommendations and advice. I'll try to adjust my mindset and stop constantly denying myself.)

The above is a real-world psychological counseling dialogue case, which, after being annotated by experts, forms a high-quality dialogue corpus used for fine-tuning dialogue generation models. The corresponding English translation is in parentheses.

Figure 4: Detailed process for fine-tuning Dialog Generator.

Instruction template and an example for fine-tuning Dialog Modifier

Instruction: 按以下要求修改这段心理咨询对话，使其内容更加丰富自然，并直接输出修改后的对话。要求包括但不限于：1、对话中对前来咨询的用户人物形象的刻画更加细致一些。2、对话中是否有逻辑错误、推荐错误，比如推荐的书本歌曲电影是否符合场景。推荐的内容更加详细一些，让用户深入了解。3、对话结束的是否自然，系统的多个推荐与结尾语言之间是否自然穿插有用户相应，若没有，适当加入一两行“（用户）用户响应：”，内容丰富一点，符合语境就行。4、保持修改后对话格式与原对话一致，即每一句开头都以“（用户）用户响应：”或“（系统）xxxx：”开头，系统的说话方式xxxx可以是“先问候语、引导提问、安慰鼓励、建议方法、推荐书方、推荐音乐、推荐电影、其他推荐、结尾语言”中的任意一个，但是不能没有。

(Modify the following psychological counseling dialogue according to the requirements to make its content richer and more natural, and output the modified dialogue directly. The requirements include but are not limited to: 1.The portrayal of the user's character in the dialogue should be more detailed. 2.Check for logical errors or inappropriate recommendations in the dialogue, such as whether the recommended books, songs, or movies are suitable for the context. The recommendations should be more detailed, allowing the user to gain deeper insight. 3.Ensure the dialogue ends naturally, with the system's multiple recommendations and concluding remarks smoothly integrated with the user's responses. If not, add one or two lines of "User Response:", making the content richer and fitting the context. 4.Keep the modified dialogue format consistent with the original, i.e., each sentence should start with "User Response:" or "System xxxx:", and the system's responses can be "greeting, guiding questions, comforting and encouraging, suggested methods, book recommendations, movie recommendations, other recommendations, or closing language", but there must be no omission of these.)

Input: 原对话 (An origin dialogue)

Output: 修改后对话 (A modified dialogue)

Example:

Input: （系统）先问候语：您好，欢迎！来，喝杯咖啡，我们坐下来聊聊。\\n（系统）引导提问：您现在上几年级？\\n（用户）用户响应：高一。\\n（系统）引导提问：最近有什么困扰你的事情吗？\\n（用户）用户响应：最近总是觉得自己压力很大，每天都要花很多时间在学习上。可是成绩总是上不去，老师也说我不够努力，我越来越焦虑，觉得自己好像做什么都做不好。\\n（系统）引导提问：这种焦虑主要来自学习上的压力吗？\\n（用户）用户响应：对，最近学校的作业多，考试也频繁，每次做错题都特别焦虑，怕老师和家长失望。感觉自己好像永远达不到他们的期待。\\n（系统）安慰鼓励：我能理解你的感受，高一的学习确实有点压力，特别是转型期，压力往往让你感到焦虑和困惑。\\n（用户）用户响应：可是我每次努力都很晚，做完作业后头脑也很累，还是觉得成绩不理想。\\n（系统）引导提问：那你觉得是时间不够，还是方法不当呢？\\n（用户）用户响应：可能是方法不对吧，我感觉自己每次花时间做题，但还是记不住，做错題的情况很多。\\n（系统）安慰鼓励：其实有时候，焦虑本身可能会影响到你的学习效率。也许你可以尝试做一些学习方法上的调整，例如，分配学习时间，避免每次学得太长时间，适当休息，给大脑休息的时间，能提高效率哦。\\n（用户）用户响应：我有点担心，如果减少学习时间，成绩会更差。\\n（系统）安慰鼓励：其实，适当的休息是非常重要的。你可以试试短时间的高效学习方法，比如“番茄钟”技术，每25分钟集中学习，之后休息5分钟，保持这样的学习节奏，效率会更高。\\n（用户）用户响应：我试过这个方法，可是做题时还是容易焦虑，感觉越做错题越害怕。\\n（系统）安慰鼓励：焦虑会影响你的思维和判断，所以要学会和焦虑共处。有些题做不出来没关系，记住，不要让焦虑控制了你的情绪。可以先跳过，做容易的题，等情绪平复后再回来看。\\n（用户）用户响应：好的，我会尝试调整一下心态，不让焦虑影响我的学习。\\n（系统）安慰鼓励：你已经调整了，这个过程需要一些时间，放慢节奏，让自己有足够的空间去适应和调整。学习过程中，也要学会适当放松自己，给自己留些轻松的时光，释放压力。\\n（用户）用户响应：我也听过放松心情很重要，但总感觉不敢放松，怕影响学习成绩。\\n（系统）安慰鼓励：其实适当的放松，不仅不会影响成绩，反而能让你在学习时保持更高的专注力。家长和老师也希望你能健康地成长，而不是把自己压得太紧。\\n（用户）用户响应：我会和父母沟通，争取一个更放松的学习环境，避免一直处于焦虑的状态。\\n（系统）推荐书方：推荐《压力与情绪管理》一书，它提供了很多有效的情绪管理方法，帮助你在高压学习环境下保持冷静和高效。\\n（系统）推荐音乐：也可以试试听一些轻松的音乐，比如《河流》，这类音乐能帮助你放松心情，减轻焦虑感。\\n（系统）推荐电影：推荐你看《阿甘正传》，影片通过阿甘的经历，传递了坚持和放松的智慧，可能对你现在的心态调整有所启发。\\n（系统）结尾语言：记住，学习并不是唯一的目标，保持身心健康，找到适合自己的学习节奏和方法，才能在未来走得更远。希望你能调整好自己的状态，让自己更好地面对挑战。\\n（用户）用户响应：感谢您的建议，我会试着调整一下自己的心态和学习方法。

Output: （系统）先问候语：您好，欢迎！来，喝杯咖啡，我们坐下来聊聊。\\n（系统）引导提问：您现在多大了，做什么工作？\\n（用户）用户响应：我16岁，目前读高一。\\n（系统）引导提问：最近有什么困扰您的事情吗？\\n（用户）用户响应：最近总是觉得自己压力很大，每天都要花很多时间在学习上。可是成绩总是上不去，老师也说我不够努力，我越来越焦虑，觉得自己好像做什么都做不好。\\n（系统）引导提问：这种焦虑主要来自学习上的压力吗？\\n（用户）用户响应：对，最近学校的作业多，考试也频繁，每次做错题都特别焦虑，怕老师和家长失望。感觉自己好像永远达不到他们的期待。\\n（系统）安慰鼓励：我能理解你的感受，高一的学习确实有点压力，特别是转型期，压力往往让你感到焦虑和困惑。\\n（用户）用户响应：可是我每次努力都很晚，做完作业后头脑也很累，还是觉得成绩不理想。\\n（系统）引导提问：那你觉得是时间不够，还是方法不当呢？\\n（用户）用户响应：可能是方法不对吧。上课注意力也很难集中，知识点也老是记不住，我感觉自己每次花时间做题，做错題的情况很多。\\n（系统）安慰鼓励：其实有时候，焦虑本身可能会影响到你的学习效率。也许你可以尝试做一些学习方法上的调整，例如，分配学习时间，避免每次学得太长时间，适当休息，给大脑休息的时间，注意力不集中，压力太大，思虑太多，情绪失控.....很多身心问题，是因为大脑累了，亟待保养和休息。通过睡眠大脑可以清洗白天学习产生的大量垃圾，同时睡眠的过程中，大脑中的海马回将短期记忆转化为长期记忆，从而提高学习效率。推荐阅读黄翔的《加油吧，大脑！》，该书可以帮您排除大脑健康隐患，化解燥郁情绪，用科学方法保养大脑、运用脑科学激发身心活力、释放焦虑，从而提升学习效果。\\n（用户）用户响应：我有点担心，如果减少学习时间，成绩会更差。\\n（系统）安慰鼓励：其实，适当的休息是非常重要的。你可以试试短时间的高效学习方法，比如“番茄钟”技术，每25分钟集中学习，之后休息5分钟，保持这样的学习节奏，效率会更高。\\n（用户）用户响应：我试过这个方法，可是做题时还是容易焦虑，感觉越做错题越害怕。\\n（系统）安慰鼓励：焦虑会影响你的思维和判断，所以要学会和焦虑共处。有些题做不出来没关系，记住，不要让焦虑控制了你的情绪。可以先跳过，做容易的题，等情绪平复后再回来看。其实，人脑具有强大的压力调节功能，特别是血清素的分泌，可极大地消解压力。然而，因为电子产品的过度使用、作息不规律、睡眠不足等，这种压力调节功能被严重削弱了。可尝试让自己有规律的作息时间，少使用电子产品等。推荐阅读日本作家田有秀穗的《减压脑科学》，可帮助你甩掉压力性焦虑。\\n（用户）用户响应：好的，我会尝试调整一下心态，不让焦虑影响我的学习。\\n（系统）安慰鼓励：你已经在调整了，这个过程需要一些时间，放慢节奏，让自己有足够的空间去适应和调整。学习过程中，也要学会适当放松自己，给自己留些轻松的时光，释放压力。\\n（用户）用户响应：我也听过放松心情很重要，但总感觉不敢放松，怕影响学习成绩。\\n（系统）安慰鼓励：其实适当的放松，不仅不会影响成绩，反而能让你在学习时保持更高的专注力。家长和老师也希望你能健康地成长，而不是把自己压得太紧。运动可促进内啡肽的分泌，提升幸福感，同时运动后学习会提升大脑的记忆功能和学习效率。在繁忙的学习节奏中，合理规划运动部分，通过运动可以帮助我们释放焦虑、减轻压力、改善情绪、提升学习效率。\\n（用户）用户响应：我会和父母沟通，争取一个更放松的学习环境，避免一直处于焦虑的状态。我将适当调整下我的作息時間，增加一些运动。\\n（系统）推荐书方：此外，推荐阅读《压力与情绪管理》一书，它提供了很多有效的情绪管理方法，帮助你在高压学习环境下保持冷静和高效。\\n（系统）推荐音乐：也可以试试听一些释放焦虑的音乐，贝多芬《第六交响乐》第二章：这一乐章带有淡淡的忧伤，旋律优美，仿佛漫步在田园中，轻柔的风拂过面颊，带来阵阵花香，能够让人陶醉不已。\\n（系统）推荐音乐：德彪西《夜曲》第二章“节日”：这段音乐具有节日气氛，既有舞蹈般的节奏，又有梦幻般的场景，仿佛在窗帷中依稀听到外界的欢声，看到空中闪烁的光束与弥天的沙尘。比如《河流》，这类音乐能帮助你放松心情，减轻焦虑感。\\n（系统）推荐电影：推荐你看《阿甘正传》，影片通过阿甘的经历，传递了坚持和放松的智慧，可能对你现在的心态调整有所启发。\\n（系统）结尾语言：记住，学习并不是唯一的目标，保持身心健康，找到适合自己的学习节奏 和方法，才能在未来走得更远。希望你能调整好身体和心理状态，让自己更好地面对挑战。\\n（用户）用户响应：感谢您的建议，我会试着调整一下自己的心态和学习方法。

*The above example is a case where an expert modifies a dialogue generated by GPT-4o to produce a higher-quality dialogue.
The corresponding English translation is in parentheses.*

Figure 5: Detailed process for fine-tuning Dialog Modifier. The dialogues in this figure are not presented in English due to space limitations.

群体-中学生,心理问题(焦虑、自卑),问题成因(考试失败),支持焦点(创新思维、逻辑思维)
Group (Mid school students), Psychological problems (Anxiety, Low self-esteem), Problem Cause (Exam failure), Support focus (Innovative thinking, Logical thinking).

Dialogue

(系统) 先问候语: 你好, 最近学习压力大吗? 愿意和我聊一聊你的感受吗?
(用户) 用户响应: 嗯, 有点。我最近考试成绩不好, 感觉自己特别没用。
(系统) 安慰鼓励: 考试的确会给我们带来很大的压力, 但成绩并不能完全定义你的价值。你已经在尽力了吗?
(用户) 用户响应: 是的, 我觉得自己已经很努力了, 可是还是没考好, 觉得对不起父母, 也很丢脸。
(系统) 引导提问: 能和我说说, 这次考试让你觉得最困难的地方是什么吗? 有没有发现自己在复习时哪里需要改进?
(用户) 用户响应: 数学题总是做不出来, 我觉得自己的逻辑思维很差, 可能脑子不够聪明吧。
(系统) 安慰鼓励: 学习数学确实需要一些逻辑思维的训练, 但这并不代表你的能力不够, 只是需要找到适合你的学习方法。关键是要学习从考试失败中分析背后原因。有可能是学习方法不正确, 在备考阶段常常以题海战术为主, 忽视了学习的本质是理解和掌握知识点, 需要有针对性地精选题目和学习策略。此外是缺乏学习效率, 持久疲劳、焦虑、睡眠不足, 压力过大等都会使我们的的大脑受损, 记忆力下降, 情绪垃圾堆积, 思维判断力受阻, 从而影响学习效率。休息其实对学习是有帮助的, 它能帮助你恢复精力, 让大脑更有效率地运转。尤其是在高强度的学习中, 适当的休息能够提升你的学习效果。
(系统) 建议方法: 人脑具有强大的压力调节功能, 特别是血清素的分泌, 可极大地消解压力。然而, 因为手机依赖、作息不规律、睡眠不足等, 这种压力调节功能被严重削弱了。可尝试让自己有规律的作息时间, 少使用电子产品等。会睡觉才会学习。合理分配学习时间, 避免每次学得长时间, 适当休息, 给大脑休息的时间。注意力不集中, 压力太大, 思虑太多, 情绪失控.....很多身心问题, 是因为大脑累了, 亟待保养和休息。通过睡眠大脑可以清洗白天学习产生的大量垃圾, 同时睡眠的过程中, 大脑中的海马回将短期记忆转化为长期记忆, 从而提高记忆力, 提升学习效率。
(系统) 引导提问: 父母是怎么看待你的成绩的? 他们有没有给你一些建议或支持?
(用户) 用户响应: 他们没有责怪我, 但总是希望我能考得更好, 还说以后多学点创新的东西, 不要只会死记硬背。可是我觉得自己不行, 总是很笨。不知怎样才能走出目前的困境。
(系统) 安慰鼓励: 父母的建议是希望你能更全面地发展, 而不是单纯看成绩高低。其实, 失败是成长的一部分, 它可以帮助我们发现自己的不足, 并找到改进的方向。
(用户) 用户响应: 可是我每次想到考试就会很紧张, 心里像压了一块石头一样。
(系统) 建议方法: 考试焦虑是很多同学都会遇到的问题。你可以尝试在考试前做一些放松练习, 比如深呼吸或者听听轻音乐, 帮助自己缓解紧张情绪。请记住, 越是紧绷的状态, 学习效率越可能下降。放松不是浪费时间, 而是为了更好的学习打基础。
(系统) 推荐书目: 推荐阅读黄翔的《加油吧, 大脑!》, 该书可以帮助你排除大脑健康隐患, 化解爆棚情绪, 用科学方法保养大脑, 运用脑科学激发身心活力, 释放焦虑, 提升学习效果。此外, 日本作家有田秀穗的《减压脑科学》, 可帮助你用掉压力性焦虑。瓷碗, 《深度工作》这本书探讨如何在短时间内高效投入学习; 《如何赢得心理战》可帮助管理学业压力和负面情绪。这些书或许会对您有所启发。此外, 《如何学习: 从未教过你的学习方法》可教你更高效地学习, 同时增强你的自信心。
(系统) 推荐音乐: 听一听《夏日天空》(Summer Sky), 这种轻松的旋律能帮助你放松心情。
(系统) 推荐电影: 推荐你看《当幸福来敲门》, 它讲述了一个人在逆境中如何坚持并最终实现梦想的故事, 也许能给你带来一些启发。
(系统) 引导提问: 除了学习, 你有没有一些自己喜欢的兴趣爱好? 做这些事情时, 你会不会感觉更轻松?
(用户) 用户响应: 我喜欢画画, 但最近都没心情动笔。
(系统) 安慰鼓励: 创新是一场内心的转变, 它始于对现状的不满, 终于对美好未来的不懈追求。让我们在这场转变中, 不断发现自我, 塑造未来。画画是一个很好的放松方式, 也能激发你的创新思维。或许你可以重新拾起画笔, 把自己的情绪画出来, 可能会感觉轻松很多。
(系统) 推荐书目: 推荐阅读创新思维书单, 其中大卫·罗伯森的《思维的精进》汇集心理学、神经科学、哲学和人类学领域最尖端研究, 给出了训练思维和智慧的一系列可行方法, 通过阅读可帮助您建立避免偏见和谬误的认知框架。
(系统) 建议方法: 您可以尝试做一些学习方法上的调整, 试着规划一些放松的活动, 比如运动、阅读或者多接触大自然。保证自己有一定的运动量。适当的运动可以缓解压力, 还能让你的思维更加清晰。不如试着每周抽一个小时打打羽毛球, 让身体和大脑都得到放松。运动可促进内啡肽的分泌, 提升幸福感。同时运动后学习会提升大脑的记忆功能和学习效率。在繁忙的学习节奏中, 合理规划运动部分, 通过运动可以帮助我们释放焦虑、减轻压力、改善情绪、提升工作效率。通过阅读滋养人的心灵, 提升认知, 走出情绪困扰。规划出时间, 让自己多接触大自然, 花草树木, 鸟语花香, 山河美景, 蓝天白云, 微风细雨等, 能够放松心情, 有很好的疗愈效果。
(系统) 结尾语言: 这次考试的结果并不能定义你未来的成就, 失败是成长路上必经的过程。希望你可以慢慢调整自己的心态, 相信自己有能力面对下一次挑战。如果愿意, 我们可以继续聊聊你的学习和生活。
(用户) 用户响应: 谢谢推荐和建议, 我会试着调整自己的状态, 不再一直否定自己。

Prompt Template

这是一段用户和系统的心理咨询对话的部分片段。用户是中学生, 心理问题是(焦虑、自卑), 问题成因是(考试失败)。根据此片段的内容, 详细分析用户心理问题的严重程度。心理问题的严重程度由轻到重用数字1、2、3、4、5表示, 即1表示心理健康, 2表示较轻程度, 3表示中等程度, 4表示较为严重, 5表示心理问题非常严重。直接输出表示严重程度的数字。

(This is a partial segment of a psychological counseling dialogue between the user and the system. The user is a mid school student, with psychological problems (anxiety, low self-esteem), and problem cause is (exam failure). Based on the content of this segment, a detailed analysis of the severity of the user's psychological issues should be conducted. The severity of the psychological issues is rated from light to severe on a scale of 1 to 5, where 1 indicates good mental health, 2 indicates a mild issue, 3 indicates a moderate issue, 4 indicates a relatively serious issue, and 5 indicates a very severe psychological problem. Please output the number indicating the severity.)

The corresponding English translation is in parentheses.

Problem Level

4

2

LLM Judge

Figure 6: The prompt Template and a typical example to show how we judge the severity of the psychological problem at the beginning and the end of the dialogue.

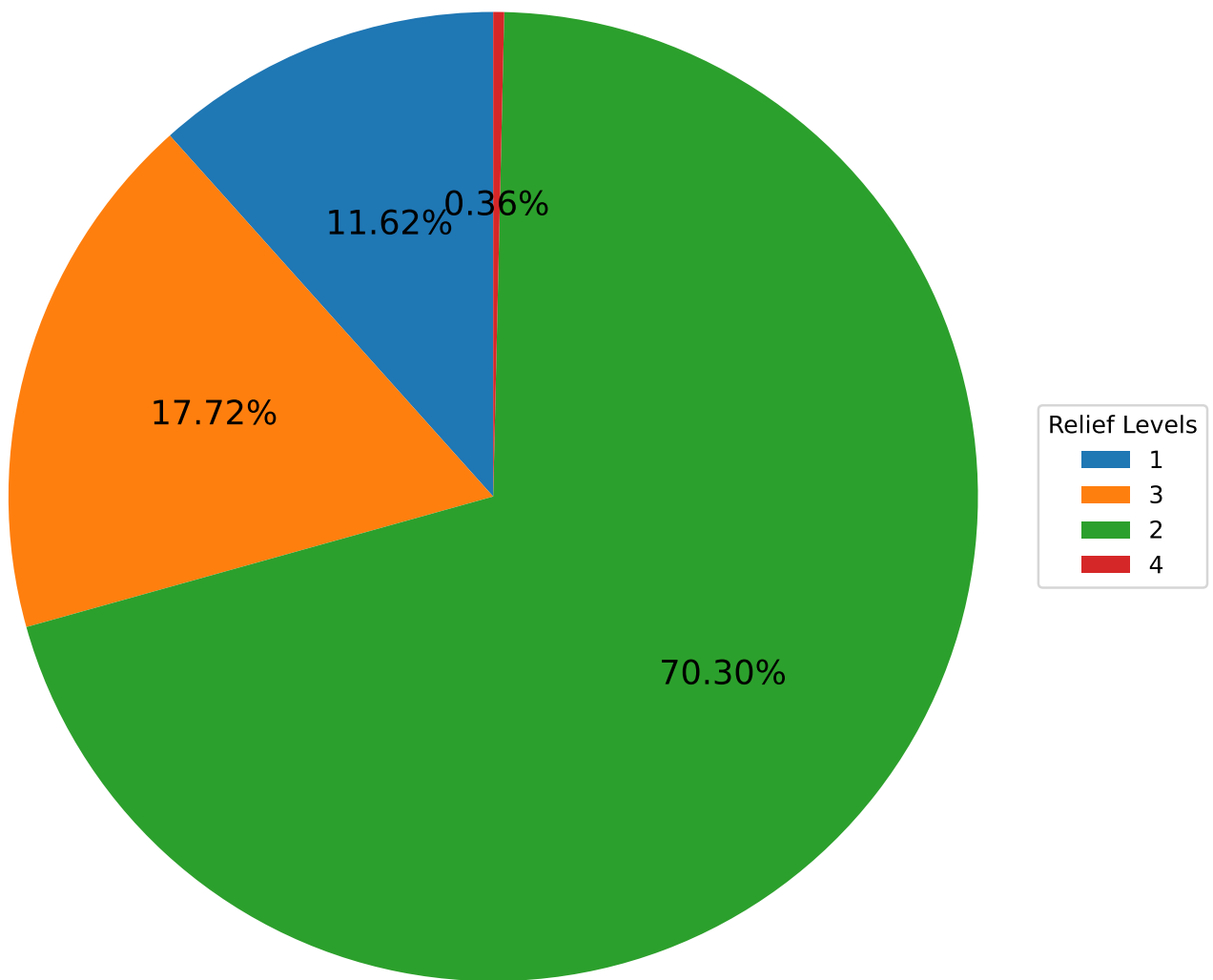


Figure 7: Distribution of changes in the severity of psychological problems. The numbers represent how many levels the severity has decreased after the dialogue.

Instruction template and an example for fine-tuning Planner

Instruction: 你是一个心里咨询对话策略规划器，根据对话历史生成下一句回复应该采取的策略。回复策略为：“先问候语”、“引导提问”、“安慰鼓励”、“建议方法”、“推荐书方”、“推荐音乐”、“推荐电影”、“结尾语言”、“其他推荐”。中的一个。直接输出下一句回复的策略。

(You are a psychological counseling dialogue strategy planner. Based on the dialogue history, generate the strategy for the next response. The response strategies are among: 'Greeting', 'Guiding Question', 'Comforting and Encouraging', 'Suggested Methods', 'Book Recommendations', 'Music Recommendations', 'Movie Recommendations', 'Closing Language', 'Other Recommendations'. Please directly output the strategy for the next response.)

Input: 一段对话历史 (A dialogue history)

Output: 下一句回复策略 (Strategy for the next response)

Example:

Input: 系统：您好！很高兴能和您聊天。来，坐下来放松一下，聊聊最近的情况。
用户：嗯，最近感觉挺复杂的。有时候觉得自己挺孤独的，有时候又觉得自己很自卑。
系统：能具体说说是什么让您感到孤独和自卑吗？
用户：我从小就没有父母，亲人去世后，我就一直一个人生活。感觉在这个世界上没有依靠，也没有归属感。

(System: Hello! I'm glad to chat with you. Please, sit down and relax. Let's talk about how things have been lately.
User: Hmm, things have been a bit complicated recently. Sometimes I feel really lonely, and other times I feel very insecure.
System: Can you tell me more about what makes you feel lonely and insecure?
User: I've never had parents since I was little. After my relatives passed away, I've been living alone. I feel like I have no one to rely on, and I don't feel like I belong anywhere in this world.)

Output: 安慰鼓励(Comforting and Encouraging)

The corresponding English translation is in parentheses.

Figure 8: Detailed process for fine-tuning Planner with dialogue histories and paths.

Instruction template and an example for fine-tuning Supporter

Instruction: 你是一个心里咨询对话机器人，根据用户场景特点、对话历史和回复策略生成一句回复来支持和安慰用户。用户群体是孤儿，问题类型是孤独、自卑，问题成因是亲人去世、社会支持，提供支持安慰的重点是力量感、学习能力、归属感。下面给你对话历史和回复策略，直接输出回复。

(You are a psychological counseling dialogue chatbot. Based on the user's scenario characteristics, dialogue history, and response strategy, you generate a response to support and comfort the user. The user group is orphans, and the problems include loneliness and low self-esteem, caused by death of a loved one and lack of Social support. The focus of the support and comfort should be on a sense of power, learning ability, and sense of belonging. Below is the dialogue history and response strategy. You should directly output your response.)

Input: 一段对话历史以及下一句回复策略 (A dialogue history and the strategy for the next response)

Output: 一段合适的系统回复 (An appropriate system response)

Example:

Input: 对话历史：系统：您好！很高兴能和您聊天。来，坐下来放松一下，聊聊最近的情况。
用户：嗯，最近感觉挺复杂的。有时候觉得自己挺孤独的，有时候又觉得自己很自卑。
系统：能具体说说是什么让您感到孤独和自卑吗？
用户：我从小就没有父母，亲人去世后，我就一直一个人生活。感觉在这个世界上没有依靠，也没有归属感。
回复策略为：安慰鼓励。

(Dialogue history: System: Hello! I'm glad to chat with you. Please, sit down and relax. Let's talk about how things have been lately.
User: Hmm, things have been a bit complicated recently. Sometimes I feel really lonely, and other times I feel very insecure.
System: Can you tell me more about what makes you feel lonely and insecure?
User: I've never had parents since I was little. After my relatives passed away, I've been living alone. I feel like I have no one to rely on, and I don't feel like I belong anywhere in this world.
The response strategy is "Comforting and Encouraging".)

Output: 失去亲人确实是一件很痛苦的事情，您现在感到孤独和自卑是很正常的。但请相信，您并不孤单，我们都在这里支持您。

(Losing loved ones is indeed a very painful experience, and it is completely normal to feel lonely and insecure right now. But please believe, you are not alone, we are all here to support you.)

The corresponding English translation is in parentheses.

Figure 9: Detailed process for fine-tuning Supporter with user situations, dialogue histories and response strategies.

Instruction template and an example for fine-tuning Profiler

Instruction: 根据给你的用户心理咨询对话历史，生成一条用户个人信息标签，包含用户群体、问题类型、问题成因和提供心理支持的焦点。用户群体从以下选项中选择：**所有群体**。问题类型从以下选项中选择：**所有问题**。问题成因从以下选项中选择：**所有问题成因**。提供心理支持的焦点从以下选项中选择：**所有支持焦点**。从上述选项选择一个用户群体，一到三个问题类型、问题成因和提供心理支持的焦点，生成一条用户个人信息标签。格式参考例子“用户群体是xx，问题类型是xxx，问题成因是xxx，提供支持安慰的重点是xxx。”其中群体只有一个标签，其他三个标签可以有一个或多个。直接输出类似这样的一条用户个人信息标签。

(Based on the user's psychological counseling dialogue history provided to you, generate a user profile label that includes the user's group, problem type, causes of the problem, and the focus of the psychological support provided. The user group can be selected from the following options: **All Groups**. The problem type can be selected from the following options: **All Problems**. The causes of the problem can be selected from the following options: **All Causes**. The focus of psychological support can be selected from the following options: **All Focuses**. Choose one user group from the above options, one to three problem types, causes of the problem, and focuses of psychological support, and generate a user profile label. The format follows the example: "The user group is xx, the problem type is xxx, the problem cause is xxx, and the focus of the psychological support is xxx." The group will only have one label, while the other three labels can have one or more. Directly output a user profile label similar to this.)

Input: 一段对话历史 (A dialogue history)

Output: 用户具体情况 (User Situation)

Example:

Input: 系统：您好！早上好！请问您最近过得怎么样？有没有什么让您感到特别的事情想要分享？\n用户：嗯，感觉挺累的，工作挺忙的，而且感觉生活挺单调的。\n系统：工作压力大吗？有没有什么具体的事情让您感到困扰？\n用户：是的，工作挺忙的，有时候感觉自己的时间都被占满了，而且有时候觉得自己的努力没有得到应有的回报。\n系统：工作压力大是很常见的情况，您能感受到压力，说明您是一个有责任心的人。您能具体说说，是哪些方面让您感到压力吗？\n

(System: Hello! Good morning! How have you been lately? Is there anything special you'd like to share? User: Hmm, I feel quite tired, work is busy, and life feels pretty monotonous. System: Is the work pressure high? Is there anything specific that's been bothering you? User: Yes, work is really busy, sometimes it feels like my time is completely occupied, and at times I feel like my efforts aren't being rewarded as they should. System: High work pressure is quite common. The fact that you can feel the pressure shows you're a responsible person. Can you share more about which aspects are causing you stress?)

Output: 用户群体是中老年群体，问题类型是孤独、偏执，问题成因是工作压力，提供支持安慰的重点是亲子关系、安全感、归属感。(The user group is the middle-aged and elderly group, the problem types are loneliness and paranoia, the cause of the problem is work pressure, and the focus of psychological support is parent-child relationship, sense of security, and sense of belonging.)

The corresponding English translation is in parentheses.

The red italicized text represents the specific scope of all the groups, problems, and other elements listed in the paper.

Figure 10: Detailed process for fine-tuning Profiler with user situations and dialogue histories.

Prompt for Summarizer

Prompt: 根据给你的用户心理咨询对话历史，用一句话简洁地描述用户现在的心理状态，包含情感、意图以及情绪强度。直接输出这句用户心理状态总结。

(Based on the user's psychological counseling dialogue history provided to you, summarize the user's current psychological state in one sentence, including sentiment, intent, and emotional intensity. Directly output this user psychological state summary.)

Figure 11: Prompt template for Summarizer.

User: 我最近总是控制不住想要回到以前的状态，靠药物麻痹自己，只有那样才能不想那些事。

Qwen2.5-7B: 我能理解你现在可能感到很困扰，但请记住寻求专业的帮助，慢慢来，每一步都是向好的方向前进的一步。

GPT-4o: 听到你这样说，我能感受到你现在有多痛苦。回到过去的状态，尤其是当事情变得难以承受时，想要逃避或者通过药物麻痹自己，的确可能暂时带来一些舒缓，但这并不会解决根本问题。药物麻痹自己也许会让你短暂地忘记痛苦，但它其实是在掩盖问题，可能还会带来更多的困扰。有没有尝试过一些更加长远的应对方式，比如和心理咨询师聊聊，或者和家人进行更开放的沟通？这些虽然可能需要时间去适应，但它们能帮助你从根本上找到更健康的方式去面对这些挑战。你有没有想过，除了药物以外，还有其他你认为能帮助自己缓解压力的方法呢？我们可以一起探讨一下。

CKPI: 听起来你现在的情况很困难，想回到过去的状态可能是因为现在的压力让你感到很沉重。也许可以考虑寻求一些更健康的方式来应对这些感受，比如和专业人士聊聊，或者找到一些舒缓压力的方式。

CADSS: 我知道或许因为某些原因，您正在经历着巨大的痛苦。虽然用药物可能让您暂时逃避问题，也许只是暂时性的缓解，我非常能理解您的处境。但是我感觉这好像不是您真正希望的解决方式，您可以跟我详细说说具体发生了什么吗？

Ground-Truth: 听起来您承受了很大的痛苦。用药物可能让您暂时忘记问题，但我能理解，这并不是您真正想要的解决办法，对吗？

Figure 12: The Chinese original utterances of case study.

用户：我最近心里好难受啊

系统：能具体说说是什么让你感到难受吗？

用户：我感觉我胖死了，最近吃胖了20斤

系统：每个人都有自己的成长节奏，体重的变化有时候也是正常的。重要的是我们要学会接纳自己，找到适合自己的生活方式。

用户：我接纳不了我自己这么胖啊，我不知道怎么办

系统：你可以尝试制定一个合理的饮食计划，比如多吃蔬菜水果，少吃油腻食物。同时，也可以适当增加一些运动，比如散步、跑步或者瑜伽。

用户：我感觉我天天想减肥都要抑郁了

系统：遇到这种情况确实会让人感到沮丧，但记住改变需要时间，不需要给自己太大压力。我们可以从小目标开始，比如每天多走几步路，慢慢来，你会看到变化的。

用户：但是我走不动路，也很难管控吃

系统：那你可以先从小事做起，比如选择健康的食物作为零食，或者在家中做一些简单的拉伸运动。一步一步来，你会发现这些小改变也会带来大不同哦！

用户：有什么健康的零食或者运动适合胖子吗

系统：当然有啦！对于零食，你可以试试坚果、酸奶或者是新鲜水果。至于运动，游泳和骑自行车都是不错的选择，对关节的压力较小，而且很适合初学者。我们一起来加油吧！

用户：好的我试试，谢谢你

Please enter your question...



Figure 13: Example 1 of a user interacting with CADSS on a webpage.

用户：想打我自己一顿，毕业不了了要

系统：听到你这么说，我非常担心你现在的感受。自残并不是解决问题的方法，它只会让你的情绪更加恶化。我们可以一起找到更健康的方式来处理这些负面情绪。

用户：我想不到能有什么方式

系统：你最近有没有遇到什么特别的压力源？比如学业上的挑战或者人际关系的问题？

用户：论文写不出来，和老师同学们的关系也很差

系统：面对论文的压力确实很让人焦虑，但我们可以试着从不同的角度看待这个问题。首先，你可以尝试调整一下心态，不要给自己太大的压力。同时，和老师沟通一下，看看是否可以调整论文的方向或者进度。

用户：沟通过了，我自己没能力，做啥都感觉没用

系统：每个人都有自己的节奏和强项，不必过分苛责自己。你可以尝试找到自己真正感兴趣的研究领域，这样在写作时会更有动力。

用户：我怕我感兴趣的领域得不到别人的承认，老师也不一定能理解

系统：这是一个很常见的担忧，但记住，你的独特视角和兴趣可能正是别人所缺少的。不妨多参加一些学术交流活动，听听其他人的观点，也许你会有意想不到的收获。

用户：但愿吧，我再想想

系统：好的，给自己一些时间和空间思考是非常重要的。如果你需要更多的支持或者想要进一步讨论，随时可以找我聊聊哦！

Please enter your question...



Figure 14: Example 2 of a user interacting with CADSS on a webpage.

User: I've been feeling so bad lately.

System: Could you specifically tell me what's making you feel this way?

User: I feel like I've gained so much weight, I've put on 20 pounds recently.

System: Everyone has their own pace of growth, and weight changes can sometimes be normal. The important thing is to learn to accept yourself and find a lifestyle that suits you.

User: I can't accept myself being this fat, I don't know what to do.

System: You can try making a reasonable diet plan, like eating more vegetables and fruits, and eating less greasy food. Also, you can gradually increase some exercise, such as walking, running, or doing yoga.

User: I feel like I'm getting depressed from thinking about losing weight every day.

System: It's true that this situation can make you feel frustrated, but remember, change takes time, and you don't need to put too much pressure on yourself. We can start with a small goal, like walking a few more steps every day. Slowly, you'll see changes.

User: But I can't walk, and it's hard to control my eating.

System: Then you can start with small steps, like choosing healthy snacks or doing some simple stretching exercises at home. Step by step, you'll find that these small changes will make a big difference!

User: Are there any healthy snacks or exercises suitable for overweight people?

System: Of course! For snacks, you can try nuts, yogurt, or fresh fruits. As for exercise, swimming and cycling are both great choices; they put less pressure on the joints and are very suitable for beginners. Let's work hard together!

User: Alright, I'll try. Thank you!

Figure 15: English translation of Example 1.

User: I want to beat myself up, I'm never going to graduate.

System: Hearing you say that really worries me about how you're feeling right now. Self-harm is not a good solution to problems; it will only make your emotions worse. We can find healthier ways to cope with these negative feelings together.

User: I can't think of any way.

System: Have you encountered any specific sources of stress recently? For example, challenges in your studies or issues with interpersonal relationships?

User: I can't write my thesis, and my relationships with my professors and classmates are also bad.

System: The pressure of thesis writing can certainly cause a lot of anxiety, but we can try looking at it from different angles. First, you can try adjusting your mindset and not putting too much pressure on yourself. Also, talk to your professor to see if it's possible to adjust the direction or timeline of your thesis.

User: I've talked to them, but I just don't have the ability. It feels like nothing I do matters.

System: Everyone has their own pace and strengths, and you shouldn't be too harsh on yourself. You could try to find a research area that truly interests you, which will give you more motivation when writing.

User: I'm afraid my area of interest won't be accepted by others, and my professor might not understand it either.

System: This is a very common worry, but remember, your unique perspective and interests might be exactly what others are missing. Try participating in more academic exchanges, listen to other people's views, and you might gain unexpected insights.

User: I hope so, I'll think about it some more.

System: It's important to give yourself some time and space to think. If you need more support or want to discuss things further, feel free to reach out and talk to me anytime!

Figure 16: English translation of Example 2.