



Proposal for a School Counseling Chat Bot Using Fine-tuning

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1. Abstract

With the increasing importance of school counseling in recent years, there is a need for efficient and accessible methods of support. In this study, we propose an AI-based chatbot for school counseling.

2. Introduction

First, we will select a general conversation generation model as the underlying model for the chatbot and conduct fine-tuning on a dataset specific to school counseling. We train the chatbot on manuals for school counseling published by the Japanese Ministry of Education, Culture, Sports, Science and Technology, as well as books on counseling.

3. Methods

While machine learning produces excellent results in environments with large data sets, it is known to hinder learning in many cases when data sets are small. To address this problem, a method called **Few-shot Learning** (hereafter all FSL) was devised, which uses prior knowledge to generalize with supervised information to a new task with a small sample.

The large-scale language model used in creating the chatbot was GPT-4o. The natural language used is Japanese.

Published by the Ministry of Education, Culture, Sports, Science and Technology of Japan

”Promotion of support by school counselors and school social workers to improve the mental care and environment of students, etc.(児童生徒の心のケアや環境の改善に向けたスクールカウンセラー及びスクールソーシャルワーカーによる支援の促進等について(令和2年5月14日))”

“Enhancement of Educational Counseling for Children(児童生徒の教育相談の充実について)” and other documents were studied, and the responses were returned according to the nature of the consultation.

4. Discussion

It is certain that a large amount of training data will yield more accurate answers, but since publications cannot be used as a data set due to copyright and other reasons, this may be an effective method.

However, in order to improve the accuracy, we believe it is necessary to incorporate more detailed aspects such as learning data and personality settings of counselors.

We hope to combine this with our previous research on using counselors who use psychology to match the personality of the individual counselor.

5. Conclusion

We would like to bring it to the stage of practical application and have users use it and give us feedback.

We will strive to develop services that will increase the satisfaction level of consultants and further deepen our knowledge of machine learning.

References

- Reprompting: Automated Chain-of-Thought Prompt Inference Through Gibbs Sampling (2023)
- Reflexion: an autonomous agent with dynamic memory and self-reflection (2023)

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