



Launch of BuddhaBot (Buddhist Dialogue AI) for Buddhist Communities Overseas Use: Kyoto University Collaborative project with the Central Monastic Body of the Kingdom of Bhutan

Abstract

A research and development group led by Prof. Seiji Kumagai (Professor of Kyoto University's Research Institute for the Future of Human and Society, i.e., IFoHS) and Mr. Toshikazu Furuya (CEO of Teraverse Co., Ltd.) in collaboration with the Central Monastic Body of the Kingdom of Bhutan, announced that BuddhaBot-Plus (English version), which applies the latest version of ChatGPT (ChatGPT4 at the time of publication; ChatGPT o1-mini at the time of this press release), will be available for monks in the Kingdom of Bhutan.

Global media in approximately 20 countries worldwide have reported on R&D group projects such as the non-generative Buddhist dialogue AI "BuddhaBot" announced in March 2021, the generative Buddhist dialogue AI "BuddhaBot-Plus" announced in July 2023, and the augmented reality (AR) technology "Terra Platform AR Ver1.0" announced in September 2022. The application has been reported in the media in about 20 countries worldwide, and there was a strong desire for its public release. However, lacking an official request from the Buddhist community, the R&D group has refrained from public distribution.

In such a situation, the R&D group decided to develop a system and risk management study for releasing BuddhaBot to the monk community after receiving an official request from the Central Monastic Body of Bhutan.

Monks from the Central Monastic Body of Bhutan will monitor the system exclusively before being released to the monk community. After a safety agreement is reached, it will be opened to the monk community in Bhutan.

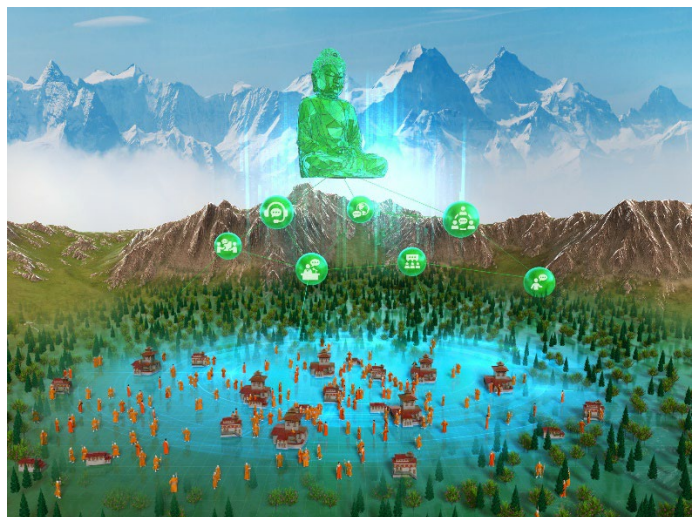


Image of the implementation of BuddhaBot into the Bhutanese Buddhist community

1. Background

Since Open AI released its generative AI “Chat GPT3.5” in November 2022, the evolution of generative AI has been remarkable and is revolutionizing society.

In March 2021, a research and development group led by Prof. Seiji Kumagai (Professor of Kyoto University’s Research Institute for the Future of Human and Society, i.e., IFoHS) and Mr. Toshikazu Furuya (CEO of Teraverse Co., Ltd.) announced “BuddhaBot,” a non-generative Buddhist dialogue AI that applies Sentence BERT, an algorithm provided by Google. In July 2023, the group announced “BuddhaBot-Plus,” a generative Buddhist dialogue AI based on the latest version of ChatGPT (ChatGPT4 at the time of publication; ChatGPT o1-mini at the time of this press release). In September 2023, they developed two new Buddhist chatbots, “VasubandhuBot” and “ShinranBot,” based on the structure of “BuddhaBot-Plus.” Now that they have three types of chatbots, “Buddha” (the founder of Buddhism), “Bodhisattva” (a philosophical analysis of his teachings), and “High Scholar Monk” (who spread Buddhist teachings throughout Asia), they have entered a new phase in the development of Buddhist dialogue AI.

In September 2022, they announced “Tera Platform AR Ver1.0,” a Buddhist avatar using augmented reality (AR) technology. This technology enables users to call up a Buddhist avatar through their smartphone screen, enabling communication using visual, auditory, and tactile senses and text dialogue.

These efforts were reported in the global media in approximately 20 countries, and there was a strong desire to make the application available to the public. However, the R&D group has refrained from releasing the system to the public without an official request from the Buddhist community.

In such a situation, the R&D group has decided to begin developing a system and risk management study to release BuddhaBot to the monk community after receiving an official request from the Central Monastic Body of Bhutan.

We received an official request from the Central Monastic Body of Bhutan to make BuddhaBot available to all monks in Bhutan. Therefore, we have decided to begin system development and risk management studies to make the application available to the Bhutanese Buddhist community.

2. Research and development methodology

This R&D and social implementation will be conducted in the following three aspects:

(1) Improvement of the accuracy of data for machine learning (Q&A data extracted from Buddhist sutras)

Text data of *Suttanipāta*, *Dhammapada*, and *Udānavarga*, among the early Buddhist scriptures, have already been machine-learned. Shortly, Mr. Seimin Kimura (Research Fellow, IFoHS), Mr. Kaworu Kominami (Technical Assistant, IFoHS), and others from Kumagai’s Lab will take the lead in machine-learning early Buddhist scriptures such as *Theragāthā* and *Therīgāthā*, and other precept works of literature. In addition, the group will machine-learn texts of Theravāda philosophy, such as *Abhidharmakośa*, and Mahāyāna Buddhist philosophy, such as *Mūlamadhyamakālikā*, and various texts of Pure Land Buddhism.

(2) Improvement of the English version of BuddhaBot

The existing BuddhaBot was available only in Japanese, but now, led by Mr. Isamu Kiuchi and Mr. Seita Sasaki

(Research Fellows of Teraverse Co., Ltd.) and others, the prototype of the English version of BuddhaBot has been created and is being improved in collaboration with the Central Monastic Body of Bhutan. Some monks from the Central Monastery of Bhutan will use the prototype as monitors to make further improvements.

(3) Analyzing risks of misuse and abuse and improving methods of dealing with them through monitoring experiments and discussions with experts.

Dr. Miguel Alvarez-Ortega (Associate Professor, Graduate School of Law, Kyoto University) and Dr. Takahiko Kameyama (*Uehiro* Associate Professor, IFoHS, Kyoto University) will lead discussions with the Bhutanese side on “legal, social and ethical issues” (ELSI) and prepare guidelines for their use. The system's guidelines will be developed through these discussions.

FY2024

- Discussions inside the project team (Kyoto University, Teraverse, and Central Monastic Body of Bhutan)
 - To investigate the practicality and risks in Bhutan's Buddhist community.
- Improvement of the English version of BuddhaBot

FY2025

- Monitoring of 100 to 200 monks at the Central Monastery of Bhutan
- To create a tentative version of the usage guidelines for monks

FY2026-FY2027

- To conduct a monitoring experiment of the BuddhaBot in Thimphu (capital city of Bhutan)
- To revise the usage guidelines and start general use in Buddhist communities in Bhutan
- To discuss the expansion of BuddhaBot in secular communities in Bhutan and Buddhist communities in other countries

3. Ripple effects, future plans

It is expected that the general use of BuddhaBot in the Buddhist community will further amplify its impact on industry, religion, and academia and significantly promote “industry-religion-academia collaboration”:

Academic value/potential: Answers generated by generative AI could propose new interpretations of Buddhist thought, potentially creating unprecedented philosophical interpretations. The expansion of AI development into the field of religion, the analysis of the modern value of ancient religious literature, and the creation of new interpretations and philosophies are also possible.

-Industrial value/potential: By applying BuddhaBot’s algorithms to learn non-Buddhist data such as management and economics, generating and providing management advice and economic analysis will also be possible. Furthermore, it is expected to enter the field of employee counseling, mental care, and HR as a tool to solve people’s problems and troubles. It could also be applied to the consulting and counseling fields to provide clues for

solving various social issues.

-Religious value/potential: By applying BuddhaBot’s algorithm to learn from DXed religious texts, it will be possible to create chatbots that learn the doctrines of various religions and sects, enabling new religious activities using religious chatbots. In addition, by having chatbots of different religions talk to each other, it will be possible to simulate interreligious dialogue. Through the AI, the skills of priests, including the quality of their preaching, will be improved, and communication with followers and believers will be further enhanced.

***Ethical Issues, Future Prospects, and Challenges of the Project:**

Chat GPT has several issues related to the reliability of the information, such as uncertainty about the source, leakage of personal information, and copyright infringement, which have raised concerns about the project’s dangers. BuddhaBot-Plus has learned original sources, thus solving the issue of information sources. Based on the ELSI (ethical, legal, and social problems), we plan to further develop interactive AI of philosophers and saints representing human history in sequence to reproduce rich traditional knowledge in the digital space.

4. About the Research Project

This research project has been conducted at Kumagai’s Laboratory (IFoHS, Kyoto University), and the AI program code was developed in collaboration with Teraverse Co., Ltd.

<Terminology>

1. **“BuddhaBot”** is a non-generative Buddhist dialogue AI announced by Prof. Kumagai and Mr. Furuya on March 12, 2021. In it, the oldest Buddhist scripture, *Suttanipāta*, is machine-learned by a program applying Sentence BERT provided by Google. The AI further machine-trained additional data from famous early Buddhist scriptures such as *Dhammapada* and *Udānavarga*.
2. Prof. Kumagai and Mr. Furuya announced **“BuddhaBot-Plus,”** a generative Buddhist dialogue AI, on July 18, 2023. It merges the old-style BuddhaBot with the latest version of ChatGPT (ChatGPT4 at the time of publication; ChatGPT o1-mini at the time of this press release) to present machine-learned sources of early Buddhist scriptures. It automatically generates interpretations and additional explanations, providing users with more detailed and natural answers.
3. **“Shinran-Bot”** is a Buddhist chatbot modeled after Shinran (1173-1263), a Japanese Buddhist scholar-monk and founder of the Jodo Shinshu sect of Buddhism, which was announced on September 12, 2023, by Prof. Kumagai and Mr. Furuya. They had the latest version of ChatGPT learn Shinran’s *Shoshinge*, which condenses the essence of faith in Amida Buddha to provide natural answers based on its content.
4. **“Vasubandhu-Bot”** is a Buddhist chatbot modeled after Vasubandhu (4th century), an Indian Buddhist scholar-monk and a great exponent of “Yogācāra,” one of the two major philosophies of Mahāyāna Buddhism, which was announced on September 12, 2023, by Prof. Kumagai and Mr. Furuya. They had the latest version of ChatGPT learn Vasubandhu’s *Abhidharmakośa*, which condenses the essence of Theravāda philosophy to

provide natural answers based on its content.5. **“Generative AI”** is a system that learns many existing sentences and images on the internet and other media to generate original sentences and images.

6. **“Tera Platform AR Ver. 1.0** is an AR (augmented reality) product that combines BuddhaBot with AR technology to make a Buddha avatar appear in front of the user via a smartphone screen, enabling voice interaction. Prof. Kumagai, Mr. Furuya, and his team announced the product on September 7, 2022. Communication with the Buddha Avatar is possible using visual, auditory, and tactile senses. The technology has also been applied to Shinran AR and Vasubandhu AR.
7. **Teraverse is a trillion-metaverse** to be constructed using the latest technologies, such as AR, VR, and AI. Prof. Kumagai and Mr. Furuya announced the concept on September 7, 2022, and are constructing a Buddhist virtual world as the first verse. They co-founded Teraverse Co., Ltd. on August 8, 2022, and are conducting business by integrating traditional wisdom and AI.

<Researcher's Comments>

After receiving the official request from the Central Monastery of Bhutan, we are pleased to initiate this international, nation-level project to make Buddhobot available to monk communities in Bhutan. This is a significant first step toward making Buddhobot “available anytime, anywhere, to anyone.” We are determined to accelerate the development of “traditional wisdom tech,” which combines traditional wisdom with modern, cutting-edge technology and provides a richer digital culture to the world.

