Major Breakthrough In Telepathic Human-AI Communication

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MindSpeech decodes seamless thoughts into text for the first time

LONDON, Aug. 15, 2024 /PRNewswire/ -- A team of academics and scientists today announced a huge breakthrough in seamless telepathic communication. For the first time, artificial intelligence has been successfully used to decode continuous imagined speech from the brain – opening new horizons in human-AI communication in the form of an AI model called MindSpeech.

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In a groundbreaking trial run by startup **MindPortal** in June, researchers have shown that AI can interpret forms of continuous imagined speech directly from the brain without requiring any surgery, paving the way for advancements in how humans will communicate with technology in the future.

MindSpeech has proved for the first time that AI can interpret forms of continuous, imagined speech from the brain.

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Unlike previous efforts, which focused on simple or memorized verbal cues or required invasive surgery, MindSpeech has been engineered to process more complex, free-form thoughts under specific test scenarios completely non-invasively. This represents a huge and important step forward in the technology's ability to understand and translate human thoughts dynamically and intuitively.

In a pioneering study published in **arXiv** and **ResearchGate** and currently undergoing peer review, MindPortal's researchers used a novel 'word cloud' task, prompting participants to imagine sentences based on topics covering over 90 percent of the most frequently used words in the English language. The data was collected using a portable headset [a high-density Functional near Infrared Spectroscopy (fNIRS) system], capturing neural activity across the entire head.

Participants generated between 433 to 827 sentences, with an average sentence length of 9.34 words, providing a robust dataset for training the AI model. The innovative approach involved the Llama2 Large Language Model (LLM) for text generation, guided by brain signal-generated embeddings. These embeddings were created by context input text with brain signals, allowing the AI to generate coherent text from imagined speech.

The results showed statistically significant results for three out of four participants, demonstrating the model's ability to decode continuous imagined speech from thought.

"Our findings are an exciting indication that we're on the path toward achieving more natural and intuitive ways for machines to understand human thoughts," **said Dr. Suyi Zhang, PhD, AI Research Engineer at MindPortal and lead AI researcher for the study.** "While our technology is not yet ready for widespread use and requires further refinement, the results in our study point to a future where this kind of telepathic communication could become a reality."

While more research is needed in the field of human-AI communication, MindSpeech has proved for the first time that AI can interpret forms of continuous, imagined speech directly from the brain without invasive surgery and points to how we may communicate with AI in the future.

"MindSpeech is the only research study to show that AI can decipher our imagined, free-flowing thoughts from the brain. Our team of researchers at MindPortal has proved that AI can interpret thoughts into text without requiring surgery or depending on a limited scope of sentences or verbal cues," **said Ekram Alam, Co-Founder & CEO of MindPortal**. "This study represents a window into how humans will communicate with AI in the very near future."

Signatory statement

"The launch of MindSpeech, the result of MindPortal's groundbreaking AI research, marks the translation of free-form thought into text. This represents a major step forward in advancing a future where seamless communication based on brain-computer interfaces, employing the combination of non-invasive physiological measures and AI algorithms, is a reality. Previous efforts have been limited to decoding memorized words or phrases. The new approach, implemented through MindSpeech, is a significant advancement in human-AI interaction, capturing the fluid nature of internal speech. MindPortal's AI research provides, for the first time, preliminary evidence that AI can decode continuous imagined speech from the brain."
– Professor Maysam Chamanzar, Former Neuralink / DARPA Scientist; Professor Gabriele Gratton, Former DARPA Scientist, University of Illinois; Professor Monica Fabiani, University of Illinois, and Professor Hamid Dehghani, University of Birmingham

About MindPortal

MindPortal is the world's first company to demonstrate human-AI telepathy. Founded in 2019 by Co-Founder and CEO Ekram Alam and Co-Founder and CTO Jack Baber, MindPortal is building the future of how humans communicate with AI. The company announced its breakthrough thought-to-text AI model, MindSpeech, in June 2024. MindPortal closed its last funding round in May 2021 from a Seed round; investors included Y Combinator and Kleiner Perkins.

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