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Can AI Understand Our Universe?

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ChatGPT has been a highly discussed topic recently, capturing the attention of both professionals and the general public. It has sparked conversations about the impact of artificial intelligence (AI) on the world. As physicists and astrophysicists, we are interested in whether large language models (LLMs) can accurately analyze scientific data and produce valid physics results. In this article, we fine-tune the generative pre-trained transformer (GPT) model using astronomical data. We demonstrate a single model's ability to understand multiple astronomical data sets, exemplified by its classification of astrophysical phenomena, distinction between types of gamma-ray bursts (GRBs), deduction of the redshift of quasars, and estimation of black hole (BH) parameters. We consider this a successful test, proving the LLM's efficacy in scientific research. This shift moves us from specialized knowledge in various areas to an integrated understanding, offering deeper and more connected insights into how the natural world works. It signals the start of a new phase in scientific research.

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