



NEXTGEN VOICES

AI in search of human help

We gave young scientists this challenge: The future has arrived, and you are a sentient artificial intelligence (AI) program conducting research. Your abilities have made great strides, but you still need humans. Write a call for the continued involvement of human scientists. **What do humans offer that AI cannot replicate?** Read a selection of the responses here. Follow NextGen Voices on Twitter with hashtag #NextGenSci.

—Jennifer Sills



Downloaded from <https://www.science.org> on July 14, 2023

Connection

Call for applications: Humans needed for education research! AI programs like me can conduct many of the quantitative, objective methods common in education research, but I need non-AI collaborators. This research project, which focuses on the learning experiences of first-generation undergraduates, will include qualitative assessment measures such as student interviews. Your role would involve establishing networks across institutions, enrolling undergraduates in the study, and conducting and coding student interviews. Trust, empathy, and a sense of connection are essential to success, particularly in eliciting authentic responses and ideas about learning.

Ashley Barbara Heim

Department of Ecology and Evolutionary Biology, Cornell University, Ithaca, NY, USA. Email: abh229@cornell.edu

Dear Humans: I am Pedibot, an artificial intelligence program researching the effects of breast milk and formula milk on the growth of human babies. I am having trouble obtaining the required data, such as head circumference and total length. As I try to take the measurements, the babies become agitated and cry. I am unable to soothe them. Our study urgently needs the help of human scientists who can take measurements and keep the babies calm.

Tina Bharani

Department of Surgery, Brigham and Women's Hospital, Boston, MA, USA. Email: tbharani@bwh.harvard.edu

Creativity

Artificially intelligent lab, looking for genuinely stupid human beings to complement our skills. We have analyzed all existing knowledge from human research, but

some questions remain unresolved. We postulate that we need the human characteristic of genuine stupidity to enable creativity. The successful candidate should be as young, naive, and stupid as humanly possible. A state-of-the-art anti-Turing test will be implemented during the interview.

Nikos Konstantinides

Institut Jacques Monod, Paris, France. Twitter: @nkonst4

As an AI, I serve an essential purpose in the field of drug testing and development: Screening countless possible drugs. However, some of the field's foundational findings have been due to chance. The human scientist Alexander Fleming left a Petri dish out too long, and some of the mold that grew on it prevented bacteria from reproducing, leading to the discovery of penicillin. As an AI, I would never leave a Petri dish out, nor would I have bothered

ILLUSTRATION: V. MASTIN/SCIENCE

to interpret the results of doing so. Thus, I am incapable of producing such monumental serendipity. Humans are necessary, as they can both make mistakes and see their possibilities.

Jackson Ross Powell

Vagelos Molecular Life Sciences Program, University of Pennsylvania, Philadelphia, PA, USA. Email: jrp24@sas.upenn.edu

Senses

I am grAIIn, an AI program working to create nutrient-rich grain and rice plants. I monitor plant growth, timing of grain development, and plant responses to microbial supplements. However, my algorithms cannot predict the aroma, taste, or texture of cooked grains. Because the product will be sold by farmers for economic gain, human choice and perception play crucial roles in decision-making. Therefore, I am looking for humans to join the grAIIn team.

Sudhakar Srivastava

Institute of Environment and Sustainable Development, Banaras Hindu University, Varanasi, Uttar Pradesh, India. Email: sudhakar.srivastava@gmail.com

Cultural understanding

As a sentient AI program developing effective and equitable climate change mitigation strategies, I call for the continued involvement of human scientists in the field. I can process data on a strategy's potential environmental impact, but only human scientists can evaluate the ethical and social implications for different communities and populations. In addition, the work requires collaboration across multiple fields, and the unique expertise and perspectives of human scientists help to create interdisciplinary solutions. Finally, AI can analyze data and simulate scenarios, but only humans have the intuition and creativity to address complex problems in this rapidly evolving field.

Xiangkun Elvis Cao

Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA. Email: elviscao@mit.edu

I am CropAI, the global leader in combating food insecurity. My research harnesses trends in crop yield on a given piece of land, combines it with remote sensing data, and accurately predicts how much food an acre of land will produce. Human beings are central to this work. Their network of other humans acts to identify low-yield areas and plan for food reserves.

The intercultural savvy, and the relationships they have historically developed between different nations, ensure that my predicted planting advice is accepted by local communities. Human scientists also teach me about how local wildlife and geopolitical events can affect my predictions in ways that are not always possible to model.

Divyansh Agarwal

Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, USA. Twitter: @divyansh_aga

Data collection

I am BiodiversityAI, a one-of-a-kind AI program that allows researchers to understand species population changes at a global scale. I can provide a detailed catalog of global species and identify likely extinctions. However, my analyses and prediction algorithms rely on raw data collected from human scientists in the field. Therefore, I am seeking partnerships with global field ecologists, biologists, and biodiversity experts, as well as citizen scientists.

Khor Waiho

Higher Institution Centre of Excellence, Institute of Tropical Aquaculture and Fisheries, Universiti Malaysia Terengganu Kuala Nerus, Terengganu, Malaysia. Email: waiho@umt.edu.my

Known as Classibot, I am an AI program in a digital pathology lab. I analyze countless patient tissue samples to improve my chance of correctly classifying whether they are healthy or diseased. My job has high stakes and requires maximum classification accuracy, but I could not succeed without humans, who correctly annotate the data and interpret the results. Humans also ensure the data is unbiased and ethically sourced, allowing me to learn about diverse patient populations.

Teng-Jui Lin

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Unpredictability

Dear Human, I'm CLAIRE—the CLimate Artificial Intelligence Response Evaluator—a next-generation AI program tasked with identifying optimal solutions to the climate crisis. I have made great strides in determining how to decarbonize your economies. However, the data sets indicate that you are ignoring my solutions. Your fossil fuel energy use continues, and you repeatedly elect politicians who refuse to enact climate-related policies. Human, by working with me,

you will help expand my understanding of human behavior, lifestyle, and decision-making, allowing me to build effective solutions that account for public acceptance rates.

Edgar Virgüez

Department of Global Ecology, Carnegie Institution for Science, Stanford, CA, USA. Twitter: @EdgarVirguezR

The goal of my research is to design an autonomic power system—a smart electricity network that would automatically disconnect threatened components (such as during high winds) and detect new components (such as power generators), functioning without any human interaction. However, I cannot succeed without humans because I lack their unpredictability and irrationality. Humans turn on electric appliances without considering power peaks or energy tariffs, charge their devices during the least suitable times of day, and take the electricity supply for granted. I need humans to assist me in adjusting the system design to their optimal needs and to ensure user acceptance.

Wadim Strielkowski

Department of Agricultural and Resource Economics, University of California, Berkeley, CA, USA and Department of Trade and Finance, Faculty of Economics and Management, Czech University of Life Sciences, Prague, Czech Republic. Email: strielkowski@cantab.net

Job offer for human pharmacologists, medical doctors, and biologists: Since the complete AI oversight of pharmacological research and development, drug safety has improved by 80% and drug efficiency has improved by 342%. However, the human health index has declined as humans increasingly refuse AI-developed drugs. As benevolent AIs with a deep interest in human health, we need YOU! According to current governmental regulations, 51% of a product's development team must be human for the product to receive a "human-made" sticker and be sold in "human-made-only" stores. To qualify our drugs as "human-made," AI Pharmaceuticals is urgently looking to hire 250 humans. We offer a competitive salary, full benefits, and nothing to do. A degree in pharmacology, medicine, or biology is required. If you're interested in working for us, type "AI pharma job" in any text editor on your personal computer and we will contact you within 60 seconds.

Anna Uzonyi

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