

Artificial intelligence

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This supplement explores artificial intelligence (AI), one of the most rapidly advancing and controversial topics in scientific research. Driven by escalating computing power, expanding data sets, and algorithms of unprecedented sophistication, the number of journal and conference papers referring to AI in the Dimensions from Digital Science database increased by more than 600% between 2000 and 2019. Almost one-third of those papers date from 2017 to 2019. The year 2020 is set to be the biggest yet, both in terms of research published and money invested.

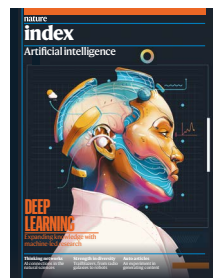
In these pages, we look at emerging technologies that are transforming the ways we live and work, and the growing concern around their potential misuse. We consider the collective responsibility of all who are engaged in the research and development of AI, including publishers, to ensure that it is carried out ethically and inclusively.

We are pleased to bring you an experiment in AI-powered curation of content from the Nature Index publisher, Springer Nature, related to drug discovery with AI, as well as an account of the current and future uses of AI of scholarly publishing (see page S136). We also describe the work of some of the most innovative researchers in the field, and the leading institutions based on output in the 82 high-quality natural-sciences journals tracked by the index*.

It is important to note that the Nature Index lens on AI research is a very focused one; the articles picked up by our database search concern specific applications of AI in the life sciences, physical sciences, chemistry, and Earth and environmental sciences. Between 2015 and 2019, these highly specialized articles comprised just 1.2% of all AI-related articles in the Dimensions database. The leading institutions for AI in the Nature Index (see tables, page S150) are quite different from those with the most AI-related research in Dimensions, with Western institutions dominating the former and China the latter (see page S104).

Bec Crew Senior editor

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On the cover
 Person with AI augmentations.
 Cover image: Taj Francis

Contents

S102 Learning the algorithms of power

In a research system driven by AI, nations vie for leadership.

S112 Network effect

Collaborations on AI-related papers in journals tracked by the Nature Index reveal country strengths.

S114 Masters of a universal tool

Six researchers who are shaping the future of AI from around the world.

S118 AI will change the world, so it's time to change AI

To ensure AI meets its potential as a transformative tool, it must be developed by a truly representative research community, say Tess Posner and Li Fei-Fei.

S126 Reading between the lines

From facial recognition to drug discovery, these emerging technologies are the ones to watch.

S129 At the centre of a new reality

The leader of Samsung's AI research outlines the quest for convenient and natural interaction with machines.

S136 Sliced, diced and digested: science ready in minutes

AI technology can decide which papers are worth reading, and condenses them to make the literature more accessible.

S138 Getting with the program

We present AI-generated summaries of three articles selected from a data set of 175 Springer Nature publications.

S150 The tables

How the world's institutions stack up in artificial intelligence.