China's ambitions in artificial intelligence

In 2017, China announced an ambitious programme for its domestic development of artificial intelligence (AI) technology, with the aim of becoming the world's 'major AI innovation centre' by 2030. China plans to expand AI in many spheres of production, governance and defence by that deadline. Even today, the country ranks second globally in AI, although it still has to overcome major challenges, in particular in terms of talent and the production of very sophisticated semiconductors. China hopes to acquire 'leapfrog' technology, including in military AI. Faced with China's technological challenge, the United States and the European Union are tracking AI developments in China more closely.

Public policy approach to AI in China

The very definition of what constitutes artificial intelligence is less than straightforward, in particular because 'AI is not a single technology breakthrough', as pointed out in a United States (US) National Security Commission on AI (NSCAI) study. The Organisation for Economic Co-operation and Development (OECD) 'AI principles', adopted by OECD Member States in 2019, define AI as: 'An AI system is a machine-based system that is capable of influencing the environment by producing an output (predictions, recommendations or decisions) ... It uses machine and/or human-based data and inputs ... to formulate options for outcomes designed to operate with varying levels of autonomy'.

China's promotion of AI through public policies takes place against the overall framework for economic policy-making, as defined by President Xi Jinping in 2013. President Xi particularly stressed the role of public policies in defining long-term objectives to reduce uncertainties for strategic planning. In the same year, President Xi also underlined the importance of technology in geopolitics: 'Advanced technology is the sharp weapon of the modern state. An important reason that Western countries were able to hold sway over the world in modern times was that they held the advanced technology'.

Following the 2016 National 13th Five-Year Plan for the Development of Strategic Emerging Industries, China's government, the State Council, tabled the 'New Generation AI Development Plan' in 2017, setting overall targets to be achieved by 2020, 2025 and 2030. China was first to enter into the 'ranks of innovative countries' and is now expected to reach 'world-leading level' by 2025 and to become the 'major AI innovation centre in the world' by 2030, making AI 'the main driving force of China's industrial upgrading and economic transformation'. Under the plan, the scale of China's AI core industries should more than triple compared to 2020 and the scale of related industries more than quintuple. By 2030, the public plan is to expand AI in many spheres of manufacturing, governance and national defence. Due to lack of transparency, especially – but not only – in the defence sector, overall figures on public expenditure on AI in China are subject to considerable caveats and estimates (even on research and development (R&D) spending only) vary between 'a few billion dollars (in 2018)' to a forecast US$70 billion for 2020. In March 2021, Prime Minister Li stated that, for the period of the new Five-Year Plan (2021-2025), spending on R&D would rise by more than 7 % annually up to 2025.

Finally, as in other fields the Chinese leadership considers important, the state (and the ruling Chinese Communist Party) set incentives for government and party officials 'to assert themselves in the AI industry and to recommend themselves for higher tasks', making AI a 'career engine.'

China's progress in AI

Following the 2017 release of its AI strategy, China already ranked number one globally in 2020, in terms of the number of research papers on AI and the number of AI related patents. China's swift advance in AI was also helped by the size of its domestic market and, at least initially, by the lack of clear privacy regulation.

The speed with which China has caught up with the USA, considered the global AI leader to date, seems to have been one reason for the US Congress to establish the NSCAI in 2018. The NSCAI's final report, published in March 2021, sounded alarm bells regarding China's progress on AI: 'For the first time since WWII, America's technological predominance - the backbone of its economic and military power - is under threat'.

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In spite of having fast outstripped its rivals, China's AI programme, is also beset by problems: some authors claim that China still lacks originality and creativity in its research and criticise the research environment in China in general. China is trying to overcome its lack of domestic AI talent by promoting AI education and has launched various programmes to reduce its reliance on 'foreign' semiconductors and to increase the sophistication of their domestic production since 2014.

Practical application of AI in China

China claims that AI made a major contribution to the suppression of Covid-19 during the pandemic, through the tracking of infected persons, the forecasting of infection trends and its contribution to the resumption of business activities. A March 2021 study by the Mercator Institute for China Studies (MERCIS) confirms that China's social credit system, which uses AI technology, was swiftly redeployed to fulfil most of these functions. The same study also points out that the social credit system has its origins in the early 1990s as part of attempts to develop a financial credit rating system and that its use in finance remains widely used today. In China, AI is also used for a variety of business purposes (e.g. online shopping) and in industry, with a focus on promoting automation.

At the same time, MERICS also stresses that due to technical innovations, there has been 'significant progress in online monitoring and almost nationwide camera surveillance coverage, as well as testing out AI and big data analysis, especially in the urban public security sector'. These concerns are confirmed by non-governmental organisations such as Human Rights Watch, which have not only underlined the use of these surveillance techniques in Xinjiang, but also their exports abroad, e.g., to Ecuador. China's 2017 AI plan states promoting further application of AI in the field of public safety among its objectives, as well as developing construction of public safety intelligence monitoring and early warning and control systems.

Some analysts, particularly in the USA, are increasingly concerned about the potential use of AI for military purposes. The main concern in this area is that AI is a promising 'leapfrog technology', best defined as the concern 'that AI-enabled military systems might change the military balance of power by giving one actor overwhelming power against which others cannot defend themselves'. As seen during a 2019 US-China Economic and Security Review Commission hearing, China's leaders are focusing on 'achieving breakthroughs in core and critical technologies' like AI. Given China's fast rising military expenditure, this could potentially lead to a destabilising arms race, in particular between the USA and China.

As Gregory C. Allen, Chief of Strategy at the US Department of Defense Joint Artificial Intelligence Center (JAIC), has pointed out, China is strongly promoting research into military use of AI. At the same time, Allen also underlines that some Chinese officials, such as Fu Ying, former Vice-Minister of China's Foreign Ministry, have sought more international cooperation on new norms for AI, and even envisaged arms control negotiations focusing on the potential impact of AI (a position also supported by the NSCAI report). One example of an initiative seeking to promote such norm-setting in AI is the 'Campaign to Stop Killer Robots', co-founded by Human Rights Watch. In this framework, China has only agreed not to use these robots (but does not oppose their production).

European Parliament

In its 12 September 2018 resolution on automated weapons systems, the European Parliament called for international negotiations on outlawing deadly autonomous arms systems. In its 17 December 2020 resolution on 'Forced labour and the situation of the Uyghurs in the Xinjian Uyghur Autonomous Region', Parliament heavily criticised 'a digitalised surveillance system so pervasive that every aspect of daily life is monitored – through facial recognition cameras, mobile phone scans, the large-scale illegal collection, aggregation and processing of personal data'. In this regard, the resolution demanded sanctions against Chinese officials and state-led entities responsible for the severe repression of basic rights in Xinjiang. The 'implementation of a large-scale surveillance programme' was also a main reason for the imposition of EU sanctions against four Chinese officials and one state state-led entity on 22 March 2021.

In an 18 June 2020 decision, Parliament set up a special committee on artificial intelligence in a digital age (AIDA). The AIDA committee commissioned study on 'Artificial Intelligence Diplomacy' recommends the creation of a 'European Security Commission on AI' and the establishment of a 'European Research Centre in AI'.