



# The China AI and Autonomy Report

A biweekly newsletter on AI and autonomy developments in China

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Welcome to the China AI and Autonomy Report, a biweekly newsletter published by CNA. Read in [browser](#).

Authors in the *PLA Daily* consider the best way forward for evaluating intelligent command systems, emphasizing the importance of integrating actual command parameters into assessing their effectiveness. PLA researchers have made a breakthrough in using an AI system with a satellite video to better identify and track objects such as planes and cars. The Cyberspace Administration of China has launched a campaign targeting the use of recommendation algorithms in internet companies. The campaign has an explicit focus on large, socially influential internet platforms, which has caused speculation that it is likely an effort to rein in social media giants Tencent and TikTok’s parent company ByteDance. PRC ministries have also released a scientific and technology development plan for its transportation sector that seeks to integrate “intelligent” technologies into many aspects of transportation, including logistics, infrastructure, traffic monitoring, and vehicles for land, sea, and air transit. Meanwhile, the Beijing Academy of Artificial Intelligence (BAAI) has issued an apology to a Google Brain research scientist who accused PRC researchers from BAAI and other prestigious PRC institutions and corporations of committing plagiarism in a BAAI publication on machine learning. Also of note, this month another of China’s “AI dragons,” the facial recognition giant CloudWalk Technologies, announced plans to go public.

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## INTELLIGENT MILITARY COMMAND SYSTEMS

**PLA Daily discusses requirements for properly evaluating intelligent command systems.** The *PLA Daily*, the official newspaper of the PLA, published an [article](#) on how best to assess the performance of intelligent command systems.<sup>1</sup> The authors write that current assessments of intelligent command systems rely on gaming technologies that overemphasize scores and win-loss rates at the expense of using actual command parameters as measures of effectiveness. They argue that the ability to carry out core command activities (e.g., maintaining situational awareness, rapid decision-making, sound strategic and tactical design, thorough planning, efficient control, and flexible response) is a better criterion for evaluating intelligent command systems. In this respect, the authors argue that evaluations of intelligent command systems involve:

- *Evaluations of situational awareness capabilities.* Criteria for evaluating situational awareness capabilities include the ability to assess enemy and friendly dispositions, perceive changes in the situation in real-time, and make predictions about the future battlefield situation.
- *Evaluations of operational decision-making.* Criteria for evaluating operational decisions include the ability to make systematic, rational, and innovative decisions. Effective evaluations include assessing the ability of intelligent command systems to deal with major changes that occur during operations, use standardized procedures, inherit content, and make timely decisions.
- *Evaluations of the ability to formulate plans.* Criteria for evaluating the ability to formulate plans include the ability to retrieve and prioritize pre-determined solutions, accurately and rationally match plans to the situation and operational objectives, differentiate between forces, and design operations according to specific plans and capabilities.
- *Evaluations of command and control capabilities.* Criteria for evaluating command and control capabilities include the ability to issue timely and complete instructions to each subordinate unit, the ability to command and control multiple units effectively, and the ability to issue commands based on changes to the battlefield situation.

To conduct these assessments, the authors argue that an effective evaluation team must be composed of functional experts who can evaluate military decision-making, technical experts who can properly evaluate intelligent system technology, and technology specialists who can support the team.

## GOVERNANCE AND LAW

**The Cyberspace Administration of China (CAC) launches a campaign targeting the use of algorithms in large PRC internet enterprises** (see original text [here](#) and translation from DigiChina [here](#)).<sup>2</sup> On April 8, CAC announced “Clear 2022 Comprehensive Governance of Algorithms”—a campaign to ensure that corporate algorithms comply with the recently adopted [Internet Information Service Algorithmic Recommendation Management Provisions](#) (hereafter referred to as Provisions). The campaign will be held from April 8 until the beginning of December 2022 and will target “large-scale websites, platforms, and products that have relatively strong public opinion properties or the capacity for social mobilization.”

[According to Bloomberg](#), although the campaign does not mention specific companies, it explicitly targets large, socially influential platforms, a possible reference to ByteDance and Tencent. The campaign is seen as part of a broader effort that began in 2020 to rein in the influence of Big Tech in China.<sup>3</sup>

**“Intelligent” technologies feature heavily in the recently publicized PRC science and technology development plan for the field of transportation.** On April 6, the Ministry of Transportation and the Ministry of Science and Technology publicly released the “Outline for the Medium- and Long-term Development Plan for Scientific and Technological Innovation in the Transportation Sector (2021–2035)” (see from PRC government [here](#)).<sup>4</sup> By 2035, the plan aims for China to be at the “forefront of the world” in terms of its overall level of innovation in science and technology for transportation. The plan’s goals that involve the use of “intelligent” technologies include the following:

- Make advances in infrastructure monitoring, maintenance, and performance using intelligent technologies.
- Further integrate intelligent technologies into road, rail, sea, and air travel. This includes making intelligent and autonomous vehicles for transit and using intelligent technologies to manage and monitor the transportation environments in each of these areas.
- Accelerate the adoption of smart logistics, using intelligent technologies to enable better coordination between various modes of transportation and to improve the efficiency of warehousing, sorting, and delivery.

It is important to note that, although the outline lists many technologies that the PRC aspires to advance and adopt, it does not provide details on entities that may be responsible for the development of specific technologies or provide specific budget allocations for R&D.

## INDUSTRY

**Another one of China’s “AI dragons” plans to go public.** On April 6, [CloudWalk Technology](#), “an AI platform specializing in facial recognition,” received approval from the China Securities Regulatory Commission to pursue an IPO on the Shanghai Stock Exchange.<sup>5</sup> According to a Beijing-based industry publication, CloudWalk will use the funds for a “human-machine collaborative operating system upgrade project” referred to as the Qingzhou KaaS Cloud Ecosystem. CloudWalk Technology grew out of the state-affiliated Chinese Academy of Sciences and launched as a commercial enterprise in 2015.<sup>6</sup> CloudWalk’s IPO will make it the second of China’s leading AI start-ups, known as the four “AI dragons,” to go public after SenseTime listed on the Hong Kong Stock Exchange in late December 2021, [amidst considerable controversy](#).<sup>7</sup>

## RESEARCH AND DEVELOPMENT

**PLA researchers develop AI system enabling satellites to track targets.** The *South China Morning Post* [reports](#) on an article authored by researchers at the PLA’s Space Engineering University who developed an AI system that was able to achieve a 95 percent success rate in tracking targets from a video feed from the Jilin-1 satellite.<sup>8</sup> According to the article, the application could enable even low-cost satellites to track targets. The research appeared in *Fire Control and Command Control*, a PRC peer-reviewed journal

published by state-owned defense conglomerate China North Industries Corporation (NORINCO).<sup>9</sup> According to the report, unlike previous systems, this AI system was able to track flying aircraft and moving cars and to reacquire targets after they were temporarily lost after making sharp turns or going through a bridge or tunnel. This AI system may lack a real-time tracking capability, however, because the video feed must be transmitted to a ground station and then processed by a computing center. The article noted that newer PRC satellites have been equipped with processors that could be uploaded with the tracking algorithm.

**Beijing Academy of Artificial Intelligence (BAAI) apologizes after Google Brain research scientist exposes plagiarism in one of its machine learning research publications.** On April 8, Nicholas Carlini, a research scientist with Google Brain, posted an article on his [website](#) describing how a recently published paper “plagiarized several paragraphs” of his work on deduplicating training data for language models and “copied from at least a dozen other papers.”<sup>10</sup> Carlini’s original [paper](#) described “deduplication tools” to improve the performance of language models.<sup>11</sup> The scandal surrounds the [paper](#), titled “A Roadmap for Big Model,” which is meant to serve as an academic review of the latest in machine learning techniques and the state of Big Model applications.<sup>12</sup> The “Roadmap” article listed over 100 authors representing some of China’s most prestigious institutions, such as Tsinghua University, Peking University, BAAI, and the China Academy of Sciences, and industry giants, such as ByteDance, Huawei, Tencent, and JD.com.<sup>13</sup> On April 14, BAAI posted an apology for the plagiarism on [Twitter](#). An official BAAI [statement](#) on the issue stated that the authors were asked to conduct a “rigorous review” of the article’s content and that “a third-party expert panel will be assembled to conduct an independent investigation of the issue, and those identified as responsible will be held accountable.”<sup>14</sup>

## NOTES

<sup>1</sup> Ke Shi, Tong Bo, and Yang Kuo, “Strengthen Assessments of Intelligent Command Systems” (加强智能化指挥系统发展评估), *PLA Daily*, Apr. 12, 2022, [http://www.81.cn/jfjbmap/content/2022-04/12/content\\_313461.htm](http://www.81.cn/jfjbmap/content/2022-04/12/content_313461.htm).

<sup>2</sup> “Notice on Launching the Special Action of ‘Qinglang 2022 Comprehensive Algorithm Governance’ (关于开展“清朗·2022年算法综合治理”专项行动的通知), Cyberspace Administration of China, Apr. 8, 2022, [http://www.cac.gov.cn/2022-04/08/c\\_1651028524542025.htm](http://www.cac.gov.cn/2022-04/08/c_1651028524542025.htm); Graham Webster, “Translation: Notice on Conducting the ‘Clear 2022 Comprehensive Governance of Algorithms’ Special Action,” *DigiChina*, Apr. 11, 2022, <https://digichina.stanford.edu/work/translation-notice-on-conducting-the-clear-2022-comprehensive-governance-of-algorithms-special-action/>.

<sup>3</sup> Zheping Huang, “China Targets Big Tech’s Algorithms as Crackdown Persists,” *Bloomberg*, Apr. 7, 2022, <https://www.bloomberg.com/news/articles/2022-04-08/china-targets-tech-giants-for-abusing-online-content-algorithms>.

<sup>4</sup> “Outline of the Medium and Long-term Development Plan for Scientific and Technological Innovation in the Transportation Field (2021–2035) (交通领域科技创新中长期发展规划纲要(2021—2035年)), *www.gov.cn*, Jan. 24, 2022 (published Apr. 6, 2022), [http://www.gov.cn/zhengce/zhengceku/2022-04/06/content\\_5683595.htm](http://www.gov.cn/zhengce/zhengceku/2022-04/06/content_5683595.htm).

<sup>5</sup> “AI Firm CloudWalk Gets Green Light for Shanghai IPO,” *Pandaily*, Apr. 7, 2022, <https://pandaily.com/ai-firm-cloudwalk-gets-green-light-for-shanghai-ipo/>.

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- <sup>6</sup> Zhang Jing, "‘AI Four Little Dragon’ Second Chinese Firm IPO: CloudWalk Technology Registration Approved" ("AI 四小龙" 中第二家 IPO: 云从科创板注册获批), *The Paper*, Apr. 7, 2022, [https://www.thepaper.cn/newsDetail\\_forward\\_17499997](https://www.thepaper.cn/newsDetail_forward_17499997).
- <sup>7</sup> "SenseTime Shares Up 150% Since Late December IPO," Reuters, Jan. 4, 2022, <https://www.reuters.com/business/sensetime-shares-up-150-since-late-december-ipo-2022-01-04/>.
- <sup>8</sup> Stephen Chen, "Chinese AI Turns Commercial Satellite Into a Spy Tracker Able to Follow Small Objects With Precision: Paper," *South China Morning Post*, Apr. 7, 2022, <https://www.scmp.com/news/china/science/article/3173285/chinese-ai-turns-commercial-satellite-spy-tracker-able-follow>.
- <sup>9</sup> Liu Yaosheng, Liao Yurong, Lin Cunbao, Li Zhaoming, and Ni Shuyan, "Video Satellite Target Tracking Algorithm Based On Kernel Correlation Filter" (基于核相关滤波的视频卫星目标跟踪算法), *Fire Control and Command Control* (火力与指挥控制), No. 47, Issue 2, (Feb. 2022).
- <sup>10</sup> Nicholas Carlini, "A Case of Plagiarism in Machine Learning Research," Apr. 8, 2022, <https://nicholas.carlini.com/writing/2022/a-case-of-plagiarism-in-machine-learning.html>.
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- <sup>12</sup> Sha Yuan et al., "A Roadmap for Big Model," arXiv, Apr. 2, 2022, <https://arxiv.org/abs/2203.14101>.
- <sup>13</sup> Shao Wen, "AI Research Institute Responds to Academic Controversy of Models Paper" (智源AI研究回应大模型论文学术争议), *The Paper*, Apr. 13, 2022, [https://www.thepaper.cn/newsDetail\\_forward\\_17591123](https://www.thepaper.cn/newsDetail_forward_17591123).
- <sup>14</sup> Beijing Academy of Artificial Intelligence, "Statement on the Alleged Plagiarism by ‘A Roadmap for Big Model,’” Apr. 13, 2022, <https://www.baai.ac.cn/portal/article/index/cid/4/id/404.html?preview=1>.

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