*The following document is China's action plan to improve university-level artificial intelligence (AI) education. Issued by the Ministry of Education in April 2018, the action plan lays out a number of objectives designed to significantly enhance China's cadre of AI talent and its university AI curricula by 2030.*

**Title**

Notice of the Ministry of Education on Issuing the *Artificial Intelligence Innovation Action Plan for Institutions of Higher Education*

教育部关于印发《高等学校人工智能创新行动计划》的通知

**Author**

PRC Ministry of Education (教育部)

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To the education departments (commissions) of all provinces, autonomous regions, and municipalities directly under the Central Government, the Education Bureau of the Xinjiang Production and Construction Corps, the education departments (bureaus) of all relevant agencies (units), and affiliated institutions of higher education:

This *Artificial Intelligence Action Plan for Institutions of Higher Education* has been written specifically to implement the *State Council Notice on the Issuance of the New Generation Artificial Intelligence Development Plan* (Guo Fa [2017] No. 35), encourage institutions of higher education to set their sights on the cutting-edge of global science and technology, continuously improve the ability to foster scientific and technological innovation, international cooperation and exchange, and provide training in the AI field, and provide strategic support to develop the next generation of artificial intelligence. This action plan is hereby printed and distributed to you. Please implement this action plan conscientiously, taking your actual situation into account.

Ministry of Education

April 2, 2018

**Artificial Intelligence Innovation Action Plan for Institutions of Higher Education**

The rapid development of artificial intelligence (AI) will profoundly change the world and how we live in it. This action plan has been written for the purposes of implementing the State Council Notice on the Issuance of the New Generation Artificial Intelligence Development Plan (Guo Fa [2017] No. 35) and the spirit of the 2017 National Work Conference on Science and Technology in Higher Education, to encourage universities to set their sights on the cutting-edge of global science and technology, bolster foundational research, conduct fundamental forward-looking research and make significant, pioneering, original breakthroughs, and further improving universities' ability to innovate and train talented people in the field of AI and serve China's needs.

**I. General requirements**

1. Basic situation

As technologies such as the internet, big data, cloud computing, and the internet of things have continued to develop, artificial intelligence has led to scientific and technological breakthroughs that are capable of causing a chain reaction and a number of disruptive technologies. It is accelerating the incubation of new drivers of economic development, shaping a new type of industrial system, and leading to a new scientific and technological revolution and industrial transformation. China is currently in the decisive stage of forming a well-off society in an all-round way. The people's desire for a good life and the requirements for high-quality economic development have created a bright future for the development and application of AI in China.

Artificial intelligence has characteristics that combine features of both the technical and the social. It is a new driver of economic development and an accelerator of social development. The capabilities of artificial intelligence, including big data-driven visual analytics, natural language understanding, and speech recognition are increasing rapidly. Business intelligence dialogue and recommendations, self-driving vehicles, smart wearables, language translation, automatic navigation, and new economic forecasting are quickly moving into a functional stage. AI technology is currently permeating and rebuilding the connections between the economic activities of production, distribution, exchange, and consumption, creating new intelligentized (智能化) demands, products, technologies, ways of doing business from the macro to the micro level and changing the way we live down to our very social structure. This has created a spike in the overall productivity of our society. At the same time, innovative applications for artificial intelligence in education are accelerating. Using smart technology to innovate new ways to provide training, revolutionize teaching methods, improve academic administration, and build an intelligentized, networked, personalized, lifelong education system are important measures for promoting the development of balanced education, educational equity, and increased education quality. It is an indispensable driver of and support for educational modernization.

Colleges and universities are places where science and technology are the number one productive force, talent is the number one resource, and innovation is the number one driver. They have distinct features when it comes to the study and application of key technologies such as the basic theory of artificial intelligence, natural language understanding, computer vision, multimedia, robotics, etc., as well as a solid foundation when it comes to training people and the development of academic disciplines. Faced with the opportunity presented by new generation AI development, colleges and universities must further enhance their strengths in basic research, the development of new disciplines, and training. They must intensify their applied basic research (应用基本研究) and increase breakthroughs in key general-purpose technologies. They must continuously promote the deep integration of artificial intelligence with the real economy in order to foster new drivers of economic development. They must continuously promote the deep integration of artificial intelligence with the demands of the people in order to provide them with new ways to improve their livelihoods. They must continuously promote the deep integration of artificial intelligence with education in order to provide new ways to revolutionize education. In doing so, they will lead China in scientific and technological innovation, training, and the demonstration of technical applications in the field of artificial intelligence, increasing the overall strength of AI in China.

2. Guiding ideology

So that China can gain a first-mover advantage in the development of artificial intelligence, and in order to provide strategic support for building China into an educational superpower, an S&T superpower, and a smart society, the Ministry of Education will fully implement the spirit of the 19th National Congress of the Communist Party of China, and will be guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. The Ministry of Education will implement a new development philosophy focused on innovation, coordination, environmental sustainability, openness, and sharing, as well as strategic policies that include the rejuvenation of China by embracing scientific education, strengthening China with talented people, innovation-driven development, and military-civil fusion (军民融合). It will accelerate the creation of a new generation talent development system for the AI field and a scientific and technological innovation system. It will comprehensively improve universities' ability to train people, conduct scientific research, provide social services, as well as pass on and innovate culture and exchange and cooperate in the AI field on an international scale. It will promote the comprehensive development of artificial intelligence as an academic discipline, training programs, theoretical innovation, technological breakthroughs, and the demonstration of the field's applications.

3. Basic principles

Insist on innovation taking the lead. Put innovation at the core of AI development at colleges and universities. Understand global AI development trends. Further improve the scientific and technological innovation system for AI at colleges and universities. Make colleges and universities epicenters for global scientific and technological innovation in AI.

Insist on melding science and education. Fully implement a fundamental mission that fosters character and civic virtue. Firmly control the core issue of improving the ability to train people; promote training, academic discipline development, and the integration of scientific research. Realize the important role that scientific education plays in the essential development (内涵式发展) of higher education and the training of high-quality talent. Continuously increase China's homegrown innovation by cultivating innovative talent and create an advantage through sustained innovation and development.

Consider the needs of those being served. Intensify structural and institutional reform. Strengthen cooperation between colleges and universities and local governments, businesses, and research institutes. Accelerate the transfer and application of scientific and technological achievements in the field of AI to key industries and sectors. Improve colleges' and universities' ability to serve major national strategies, the innovation and development of various sectors, the transformation and upgrading of the economy, and ensure everyone can make a living.

Support military-civil fusion. Understand how much the military and civilian realms should be integrated, the rules governing such integration, and its key factors. Take full advantage of colleges and universities' superiority in basic research and training and the features of disciplinary integration. Actively combine China's military–civilian integration systems. Continuously promote the bidirectional transfer and transformative application of military and civilian technology.

4. Main goals

By 2020, basically complete the scientific and technological innovation system for developing new generation artificial intelligence at colleges and universities and optimize the composition of the academic discipline system. Institutions of higher education will be making new breakthroughs in the basic theories of new generation artificial intelligence and key technical research while also further improving their superiority in training and scientific research and promoting the broad application of AI technology.

By 2025, markedly improve scientific and technological innovation ability and training quality in the field of new generation artificial intelligence. Make a number of original achievements of international significance. Demonstrate a world-class level in some theoretical research, innovative technology, and application. Effectively support the upgrading of national industries, the transformation of the economy, and the building of a smart society.

By 2030, colleges and universities will become the main force behind building the world's main AI innovation centers and will lead the development of a new generation AI talent pool to provide China with the scientific and technological support and guaranteed talent to put it at the forefront of innovation-oriented countries.

**II. Key tasks**

1. Improve the scientific and technological innovation system for AI at colleges and universities

A. Bolster basic theoretical research on new generation artificial intelligence. Focus on the major cutting-edge scientific issues related to artificial intelligence, promote the thorough interdisciplinary integration of fields such as AI, brain science, cognitive science, and psychology. Focus on basic and theoretical research in the areas of big data intelligence, cross-media sensing and computing (跨媒体感知计算), hybrid enhanced intelligence (混合增强智能), swarm intelligence, autonomous coordination control and optimized decision-making, high-level machine learning, brain-inspired smart computing, and quantum smart computing in order to provide a theoretical foundation for a paradigm shift in AI and lay a solid foundation for important theoretical innovation for new generation AI.

B. Promote the innovation of key technologies for new generation artificial intelligence. Focusing on the key algorithms, hardware, systems, etc. of new generation artificial intelligence, accelerate research into key technologies such as machine learning, computer vision, knowledge computing (知识计算), deep reasoning (深度推理), swarm intelligence, hybrid enhanced intelligence, unmanned systems, virtual reality, natural language understanding, and smart chips. Make major breakthroughs in fields such as brain-inspired intelligence, autonomous intelligence, hybrid intelligence, and swarm intelligence to form a technical system for new generation artificial intelligence. Based on core algorithms, data, and hardware, enhance cross-media (跨媒体) reasoning ability, the analytical ability of swarm intelligence, the increased capacity of hybrid intelligence, and the ability to execute autonomous motions with a focus on human-computer interaction. Create standardized, open-source, and mature artificial intelligence service support capabilities for collaboration between algorithms and chips, hardware and software, and terminals and the cloud.

C. Accelerate the creation of scientific and technological AI innovation bases. Focusing on what is needed for basic theories in the field of AI, key general-use technology, and public support platforms, accelerate the construction of innovation bases like Ministry of Education cutting-edge science centers (前沿科学中心), Ministry of Education key laboratories, and Ministry of Education engineering research centers. Oriented by major needs like cutting-edge, cross-disciplinary breakthroughs and national and regional development, promote interaction with and collaboration between innovators such as colleges and universities, scientific research institutes, and businesses. Build collaborative innovation centers. Accelerate the incubation of national-level innovation bases, such as national laboratories, key national laboratories, national technology innovation centers, national engineering research centers, and major national science and technology infrastructure. Encourage colleges and universities to create new types of scientific research organizations and conduct interdisciplinary research.

D. Accelerate the formation of world-class talent teams and high-level innovation teams. Support colleges and universities taking on major national science and technology tasks. Train and bring together a number of leading strategic scientific and technological minds with international reputations. Support colleges and universities forming interdisciplinary and multidisciplinary innovation teams and research groups in artificial intelligence, brain science,

and cognitive science. Support the use of China's Thousand Talents Program, Ten Thousand Talents Program, and Chang Jiang Scholars Program by colleges and universities to vigorously develop and bring in outstanding key young talent. Firm up support for high-quality talent and outstanding innovation teams that conduct foundational research in the public interest.

E. Bolster the formation of high-level science and technology think tanks. Encourage and support colleges and universities spearheading or participating in the formation of strategic AI research bases that conduct strategic and policy research on the development of AI for such important, charged, and forward-looking issues as education, the economy, employment, the law, and national security. Form a number of new, high-level science and technology think tanks.

F. Increase efforts to promote academic exchange and collaboration at the international level. Support the creation of a number of "111 Program" innovation centers and cooperative international laboratories in the field of AI. Incubate China's International Mega Science Plan (国际大科学计划) and Mega Science Project (大科学工程). Bring in famous international scholars more often to participate in academic discipline development and scientific research. Support the organization of high-level international academic AI conferences. Encourage Chinese scholars to take on important positions at relevant international academic organizations to increase international influence. Support the active participation of Chinese scholars in the drafting of international AI regulations and propose "Chinese initiatives" and "Chinese standards" in due course.

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**Cutting-Edge Innovation**

1.      Bolster basic and theoretical AI research. Make significant progress in autonomous learning, intuitive cognition (直觉认知), and integrated reasoning, break through challenging issues with artificial intelligence approaches such as logical derivation, learning from knowledge, and learning from experience. Create new theoretical AI models and methods that are highly interpretive, with flexible data dependency and strong generalization transfer capabilities, making it possible to move from data to knowledge and knowledge to decision-making.

2.      Increase research on key AI technologies. Focusing on key technological breakthroughs such as knowledge computing, cross-media analysis and reasoning, swarm intelligence, hybrid enhanced intelligence, and automated unmanned systems. Promote coordination of AI-specific chips, software, and hardware. Create artificial intelligence service capabilities for terminal–cloud collaboration.

3.      Promote the creation of an AI technology system. Based on the breakthroughs in core technologies such as brain-inspired intelligence, autonomous intelligence, hybrid intelligence, and swarm intelligence, focus on improving cross-media reasoning capabilities, swarm intelligence analysis capabilities, hybrid enhanced intelligence capabilities, autonomous moving body execution (自主运动体执行) capabilities, and

human-computer interaction capabilities. Promote algorithms as the core and use data and hardware as the foundation to build a stable and mature AI technology system.

4.      Increase collaborative innovation and strategic AI research. Promote collaboration and innovation in the areas of basic AI theory, multi-space security (多元空间安全), knowledge services, internet finance, disaster prevention and reduction, social delicacy management (社会精细管理), health protection and disease prevention, and scientific poverty alleviation. Establish a number of high-level science and technology think tanks for AI and support major strategic and policy-related scientific and technological research to provide theoretical support and strategic guidance for social and economic development and respond to important social concerns.

2. Improve the training system in the field of AI

G. Improve subject matter organization. Increase interdisciplinary integration with relevant fields of study, such as computing, control, quantum, neuro, and cognitive science, as well as mathematics, psychology, economics, law, and sociology. Support the creation of AI-oriented fields of study within computer science and technical areas by colleges and universities. Promote the creation of first-level disciplines (一级学科) in the field of AI. Improve development in areas related to basic AI theory, computer vision and pattern recognition, data analysis and machine learning, natural language processing, knowledge engineering, and intelligent systems. Support colleges and universities in building world-class universities and world-class curricula ("双一流"). Increase investment in subjects related to AI and promote the development of relevant interdisciplinary fields of study.

H. Create additional majors. Accelerate the implementation of the "Plan for Educating and Training Outstanding Engineers (version 2.0)" and promote the creation of the best majors, the best undergraduate degrees, and the best students. According to AI theory and technology, AI has the characteristics of universality, portability, and permeability. Actively incorporate students' academic interests and the needs of society. Actively develop the research and practice of "new engineering." Pay increased attention to the cross-integration of professional education for AI with computer and control science, mathematics, statistics, physics, biology, psychology, sociology, law, and other disciplines. Explore a new training model of "AI + X." Encourage the adaptation and integration of mathematics, big data technology, and other disciplines into intelligent science and technology for computer science majors. Place AI-related majors according to industrial demand both nationally and regionally.

I. Create more teaching materials. Accelerate the transfer of scientific and technological AI achievements and resources to education and teaching. Promote important AI-oriented teaching materials and the creation of open online curricula, especially in the main subjects of AI foundations, machine learning, neural networks, pattern recognition, computer vision, knowledge engineering, and natural language processing. Promote the drafting of a number of world-class undergraduate and graduate teaching materials and high-quality, national-level open online courses. Add artificial intelligence to the basic university course materials for computer science.

J. Increase training intensity. Improve the multi-entity collaborative AI education mechanism. Deepen industry–university educational collaboration. Expand and implement collaborative industry–university education projects in the AI field. Utilize the most recent achievements in industrial and technological development to promote training reform. Support the creation of a "new engineering discipline" in the AI field to ally industry, education, and research. Create a number of shared regional training and practice platforms that combine education, training, and research. Actively set up temporary positions in which professors in the AI field can gain experience and collaborative industry–university–research institution training platforms for engineering skills. Promote mechanisms for bidirectional exchange between university and college professors and those in industry. Encourage qualified colleges and universities to set up artificial intelligence schools, research institutes, and interdisciplinary research centers to promote the innovation of a collaborative education model that integrates science, industry, and technology and multi-channel training for innovative, entrepreneurial people in the AI field. Help colleges and universities by using incremental support (增量支持) and stock adjustments (存量调整). Steadily increase the scale of enrollment for relevant fields of study and determine an equitable hierarchical structure. Increase the intensity of AI training.

K. Increase educational accessibility. Encourage and support colleges and universities making relevant teaching and research resources available outside of their institutions. Build a public service platform to popularize AI among young people and the general public and actively work towards making science more accessible. Support the participation of college and university professors in popularizing AI education at the elementary and middle school level and conducting related research. Create pre-service and in-service training courses for teachers on AI knowledge and skills. Train teachers on how to implement intelligent education. Create non-degree AI continuing education courses at colleges and universities.

L. Support innovation and entrepreneurship. Encourage Chinese university science and technology parks and innovation and venture bases to develop innovative entrepreneurship projects. Identify a number of startup and innovation demonstration parks at colleges and universities. Support the development of innovation and entrepreneurship activities in the field of AI by college and university professors and students. Create AI-focused competitions as part of the China College Students' "Internet+" Innovation and Entrepreneurship Competition and actively promote the development of multi-level, multi-type AI science and technology competitions such as the China Adolescents Science and Technology Innovation Contest and the "Challenge Cup" National Undergraduate Extracurricular Science and Technology Competition.

M. Increase international exchange and cooperation. Support exchange students who come to China to study in the AI field through the Chinese Government "Silk Road" Scholarship Program to train industry leaders and highly talented people from Belt and Road countries. Encourage and support Chinese students going abroad to study in countries that excel in AI. Increase the amount of support for exchange students in the AI field, and use excellent international education resources in multiple ways through a variety of channels. Rely on the UNESCO Entrepreneurship Education Network National Chapter in China to increase and

promote international exchange and cooperation related to AI innovation and entrepreneurship.

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**Training**

1. Accelerate the development of AI as an academic discipline. Support the creation of AI-oriented disciplines in computer science and other technical disciplines at colleges and universities. Thoroughly discuss and confirm what is included in field of study of AI, improve the AI discipline system, and promote the development of a first-level discipline in the field of AI.

2. Strengthen specialized AI majors. Promote the creation of a "new engineering discipline" and create a new way to educate with a combined "AI + X" major; develop 100 of these special combined "AI + X" majors by 2020. Promote the creation of important teaching materials and open online courses and publish 50 world-class undergraduate and graduate textbooks and create 50 national-level quality open online AI courses by 2020. Increase AI content in majors related to big data and information management at vocational schools and train people in technical skills applicable in the AI field.

3. Strengthen AI talent cultivation. Increase integration between training and innovation research bases and improve the multi-entity collaborative education mechanism in the AI field in order to train AI talent at multiple levels in a variety of ways. Open 50 AI schools, research institutes, or interdisciplinary research centers by 2020 and help colleges and universities by using incremental support and stock adjustments. Increase training intensity in the AI field.

4. Create a multi-level AI education system. Introduce AI into elementary and middle school-level education. Work continuously to optimize and improve specialized majors and build a higher education system that blends specialized AI education, vocational training, and foundational university-level education. Encourage and support colleges and universities making relevant teaching and research resources available outside of their institutions. Build a public service platform to popularize AI among young people and the general public and actively work towards making science more accessible.

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3. Promote the transformation of S&T achievements into commercial products (科技成果转化) by colleges and universities in AI and demonstrate their applications

N. Expand the application of AI in key areas. Implement "AI + X" initiatives. Support technology transfer and transformation of S&T achievements into commercial products from colleges and universities to intelligent education, smart manufacturing, intelligent medical care, smart cities, smart agriculture, smart finance, smart judiciary, and national defense and expand the application of these technologies. Increase collaboration with relevant industries. Promote the formation of new industries and new ways of doing business in the education, culture,

medical, transportation, manufacturing, agriculture and forestry, finance, security, and national defense sectors. Incubate a number of leading AI technology businesses. Promote the formation of numerous industry clusters and demonstration areas.

O. Promote the development of intelligent education. Promote educational and teaching reform. Move towards a smart campus model based on digital campuses. Create a technology-enabled teaching environment. Explore new AI-based teaching models. Reconstruct how teachers teach, using AI to monitor the teaching process, analyze students, and assess attainment levels. Set up comprehensive, multi-dimensional, big data-based smart assessments. Accurately evaluate both teacher and student performance. Institute individualized aptitude-based curricula. Promote academic administration reform. Support schools' use of AI technology to modify their organizational structures and management systems and optimize how they operate and serve their students. Implement delicacy management and personalized service on campuses to completely upgrade schools' administrative levels. Promote lifelong online learning, encourage the development of student-centric intelligentized learning platforms, provide a rich variety of personalized learning resources, innovate how services are provided, and tailor lifelong learning.

P. Promote strong military–civil fusion (军民深度融合). Focus on information technology and make AI technology the starting point of breakthroughs. Turn towards efficient information access, semantic understanding, and information leveraging, using unmanned and human–machine hybrid systems as a model. Build joint military–civil AI technology innovation bases. Foster more joint military–civil AI innovation research projects. Promote relevant technological innovation at colleges and universities to drive military superiority and information superiority, such that innovations are "upgraded for military use and downgraded for civilian use" ("升级为军，退级为民").

Q. Encourage the formation of innovation alliances and the open sharing of resources. Encourage and support colleges and universities joining with business, industry groups, scientific research organizations, etc. to form AI industry technological innovation alliances. Actively participate in implementing major scientific projects with new generation AI and creating a national set of AI standards formulated alongside international ones. Support colleges and universities participating in the creation of open-source and open (开源开放) AI platforms, encourage them to consider the technologies that are added to the platform as achievements in scientific research, to recognize them as such, and to use them as a factor for evaluations and awards.

R. Support local and regional innovation and development. According to the developmental specificities of regional industry and the economy, focusing on major national deployment, strengthen regional and local cooperation with the Beijing-Tianjin-Hebei Region, the Xiongan New Area, the Guangdong-Hong Kong-Macau Greater Bay Area, and Northeast, Central, and Western China. Support the joint construction of a number of innovation platforms and new R&D organizations, such as collaborative innovation centers and cooperative laboratories, by colleges and universities, the government, and companies. Promote foundational, original AI research by colleges and universities that is linked to the needs of both the region and industry.

Accelerate regional transformation and upgrading as well as regional innovation and development.

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**Transforming S&T Achievements into Commercial Products and Demonstrating their Application**

1. Demonstrating the application of AI in intelligent education. Accelerate and promote the deep integration and innovative development of AI in education. Research strategies, standards, and specifications for developing intelligent education. Explore channels and methods for integrating AI technology into the educational environment, teaching models, curricula, teaching methods, academic administration, educational assessment, and educational research. Develop an intelligentized, cloud-based education platform and encourage new ways of teaching that are supported by AI to modernize education from the ground up.

2. Demonstrating the application of AI in smart manufacturing. Intelligentize the entire smart manufacturing supply chain life cycle, from design, production, testing, and support to management and service. Research and develop new types of smart sensors, solve difficult intelligent control equipment issues, and deploy the smart manufacturing cloud. Build a new ecosystem that exists across the internet and that is driven by data and knowledge, is a shared service, is self-informing, and is engaged in mass innovation. Promote the deep integration of new generation AI into smart manufacturing.

3. Demonstrating the application of AI in intelligent medical care. Target major health issues like the graying population, infectious and chronic disease, birth defects, and infertility. Break through bottlenecks in analyzing and understanding streams of multimodal big health data. Promote the efficient integration of technologies such as integrated reasoning with incomplete information, computer-aided diagnosis, and medical knowledge graphing in the healthcare sector. Advocate for the integration of big data from the medical field with big data from other fields. Set up AI-assisted intelligent medical care systems and cloud-based innovative service platforms with identification, exclusion, filtering, and reasoning features. Improve the serviceability of intelligent medical care.

4. Demonstrating the application of AI in smart cities. Based on ubiquitous and convergent intelligent sensing technology, fully analyze and understand urban ecological elements and complex urban systems. Based on core technologies such as integrated reasoning, knowledge computing engines, and swarm intelligence, build a model urban intelligent application system. Further promote high-level decision-making for city operations management. Promote the creation of an urban big data platform. Build a system to support intelligent urban delicacy management, knowledge discovery, and assisted decision-making. Create intelligent products and systems for the environment, government, and for making people's lives easier.

5. Demonstrating the application of AI in smart agriculture. Promote the deep integration of information technologies such as the internet, big data, cloud computing, and the internet of things with modern biotechnology, health and nutrition, and smart device technology. Make breakthroughs in key technologies such as farm animal and

plant information perception, analysis and smart identification, cross-media data mining analysis in agriculture, hybrid human-computer intelligent interaction and virtual reality in agriculture, swarm intelligence decision-making in agriculture, and human-computer-animal (人机物) coordination. Work together to build environmentally friendly, efficient, intelligentized, and multifunctional future agricultural models and demonstration bases.

6. Demonstrating the application of AI in smart finance. Focusing on the new issues and requirements that have come up during the implementation of the "Internet+" strategy in the financial sector, based on comprehensive information in financial big data, build a macro-level financial decision-making model in line with the conditions in China. Break through the constraints between the development rules inherent to finance and the external social environment. Use core smart technologies like deep learning for mining and analysis based on financial data from banking, securities, and the internet. Create complex financial instruction models by industry and by sector. Use models such as knowledge graphing and reasoning computing (推理计算) to accurately prevent financial risk, rate credit, and track trends based on the spatiotemporal and individual behavior attributes of financial big data.

7. Demonstrating the application of AI in the smart judiciary. Promote the combination of AI disciplines with relevant disciplines at law schools. Make full use of technologies such as text analysis, speech recognition, machine learning, and knowledge graphing. Develop intelligent prosecutorial and legal systems based on large-scale historical legal data, internet data, and other relevant data. Research and develop intelligent, assistive tools for automated clue discovery for cases, intelligent conviction and sentencing, automatic document generation, automated legal advice, and smart trials. Demonstrate the application of these technologies in courts and prosecutors' offices so as to improve the efficiency of those handling cases as well as the standardization and accuracy of case trials.

## III. Policy measures

1. Improve organization and implementation. The Ministry of Education is establishing an AI S&T Innovation Strategy Expert Committee (人工智能科技创新战略专家委员会) to direct and coordinate the implementation of this plan. All relevant departments will actively research concrete implementation measures to ensure that all tasks are accomplished. The education authorities in each province (or autonomous region or municipality directly under the Central Government) and institutions of higher education, with the goal of serving the major needs of the country, must coordinate resources, increase exploration, use their stocks incrementally and efficiently (用好增量、盘活存量), support the development of interdisciplinary subjects in the field of AI, train talented people, make scientific innovations, and transform S&T achievements into commercial products and applications.

2. Improve resource allocation. Make appropriate increases in graduate student enrollment targets in order to meet China's major strategic needs. Investigate the establishment of

national-, provincial- and ministerial-level innovation platforms to support major national science missions undertaken by colleges and universities that serve major national strategic deployments. Improve training for high-level personnel and comprehensively improve training quality for graduate students, especially doctoral candidates, in order to provide the necessary talent to innovate and develop artificial intelligence. Increase the inclination of outstanding talent in major Chinese talent projects such as the Chang Jiang Scholars Program towards AI fields.

3. Increase guidance and incubation. Through Ministry of Education expenditures on science, focus on the top-level design and incubation of major innovation platforms, the creation of major science and technology projects, and research on major science and technology strategies and policies. Accelerate the creation of a number of Ministry of Education innovation platforms. Increase incubation for major national science and technology projects and national-level science and technology innovation platforms. Encourage colleges and universities to conduct exploratory interdisciplinary research as well as foundational, forward-looking research to arrive at leading, original results and major breakthroughs.

4. Increase propaganda and promotion. The Ministry of Education will increase propaganda on and promotion of major scientific and technological achievements to colleges and universities using methods such as the China University Scientific and Technological Achievements Fair (中国高校科技成果交易会). The education authorities in each province (or autonomous region or municipality directly under the Central Government), as well as universities operating under the Ministry of Education, must without delay summarize and report on their college- or university-level training, how they are working to implement major national projects, theoretical technological breakthroughs, and major instances of the transformation of S&T achievements into commercial products at their institutions or wherever they are located.