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중국의 AI 굴기: 드러난 저력

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The “DeepSeek” Moment and More

Reuters

World Business Markets Sustainability Legal Breakingviews More

China's Manus AI partners with Alibaba's Qwen team in expansion bid

By **Reuters**

March 11, 2025 10:33 PM GMT+8 · Updated 16 hours ago

Source: https://www.peoplesworld.org/article/is-deepseek-chinas-sputnik-moment/
Soudrc: https://www.reuters.com/technology/artificial-intelligence/chinas-manus-ai-announces-partnership-with-alibabas-qwen-team-2025-03-11/

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중국 AI 연구 및 산업 현황

연구 성과 및 산업 규모를 중심으로

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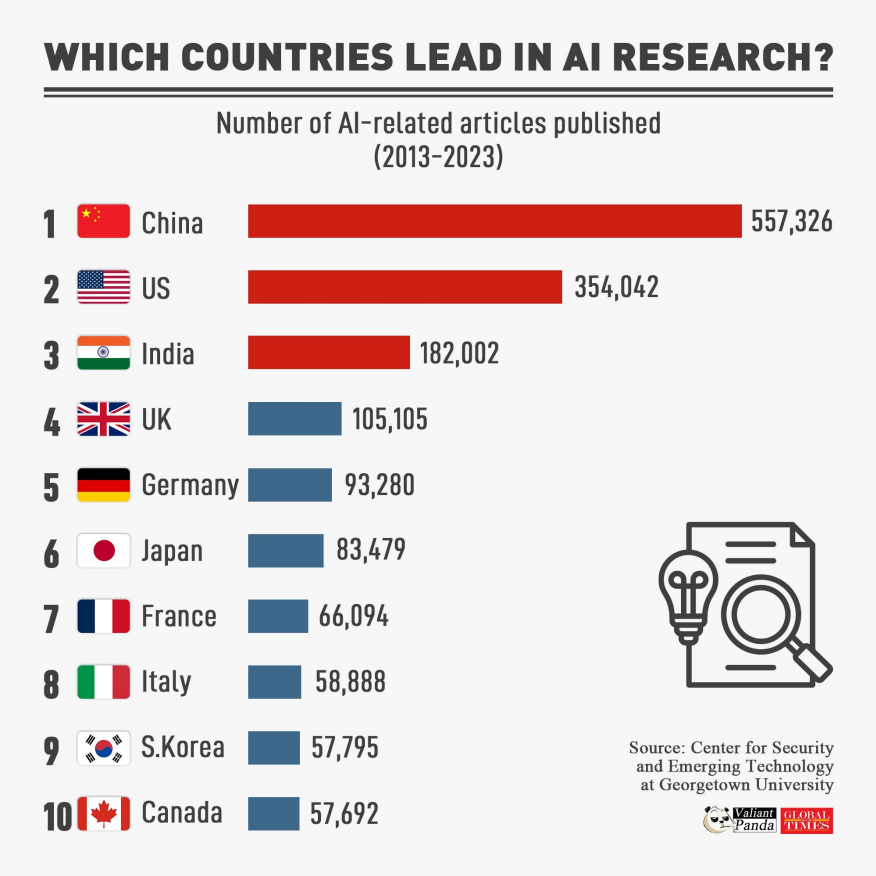
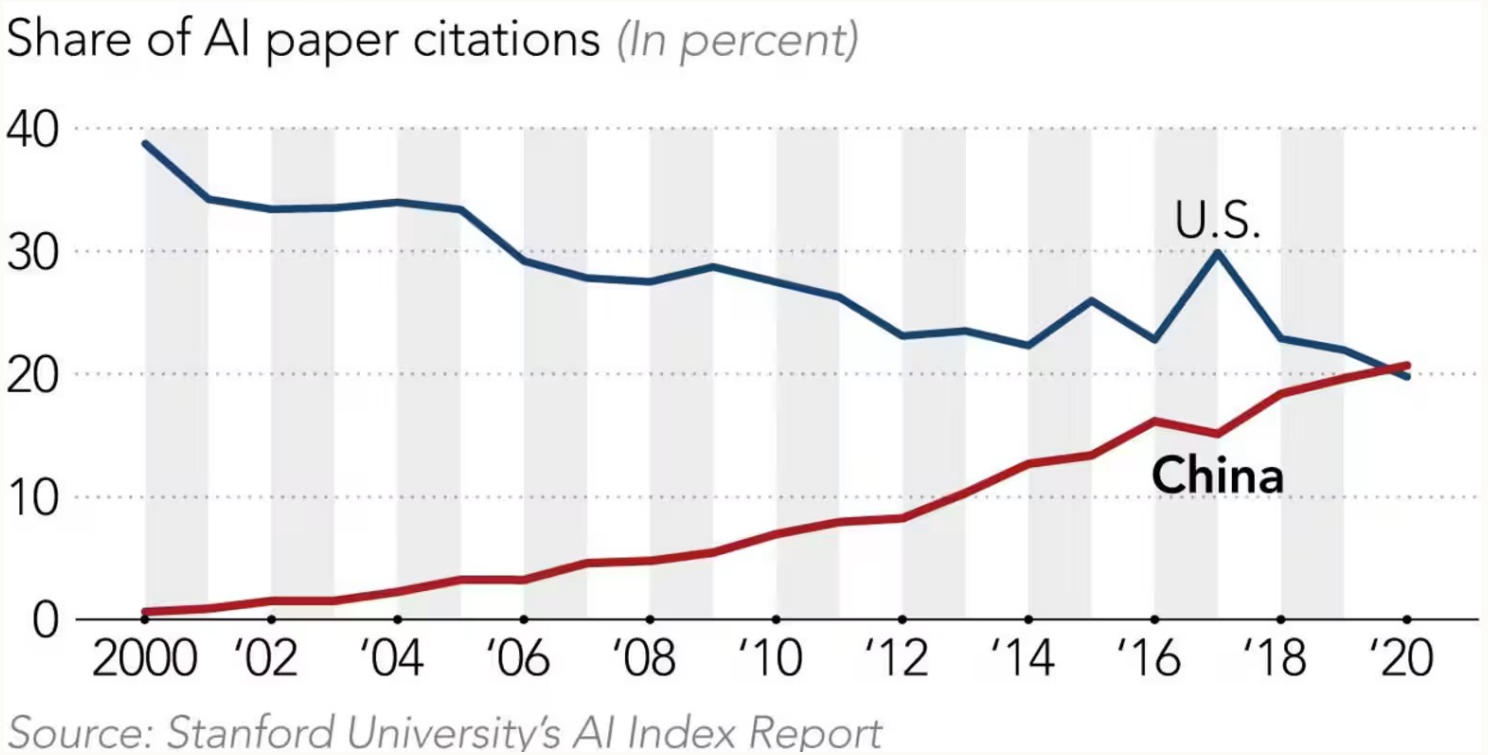
AI Research Impact

- China has challenged the US dominance in AI research impact for both quantity and quality.





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AI Research Impact (Cont'd)

- Leading organizations in Generative AI research (in 2023)

	All Research	Top-cited Research
1	Chinese Academy of Sciences	Alphabet
2	Tsinghua University	University of California, Berkeley
3	Stanford University	Université de Montréal
4	Alphabet	Stanford University
5	Shanghai Jiao Tong University	Meta
6	Massachusetts Institute of Technology	DeepMind
7	Zhejiang University	Seoul National University
8	Harvard University	Massachusetts Institute of Technology
9	Carnegie Mellon University	Chinese Academy of Sciences
10	University of Oxford	Imperial College London

Source: https://itif.org/publications/2024/08/26/how-innovative-is-china-in-ai/

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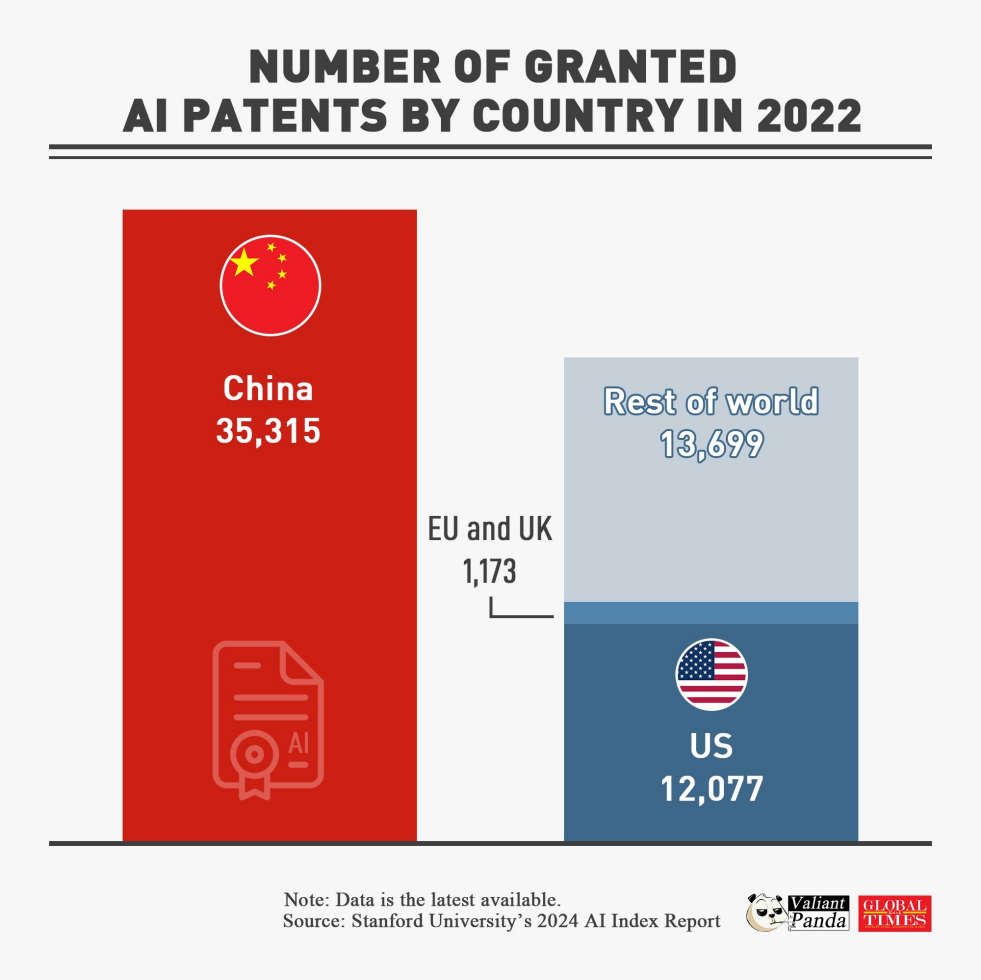
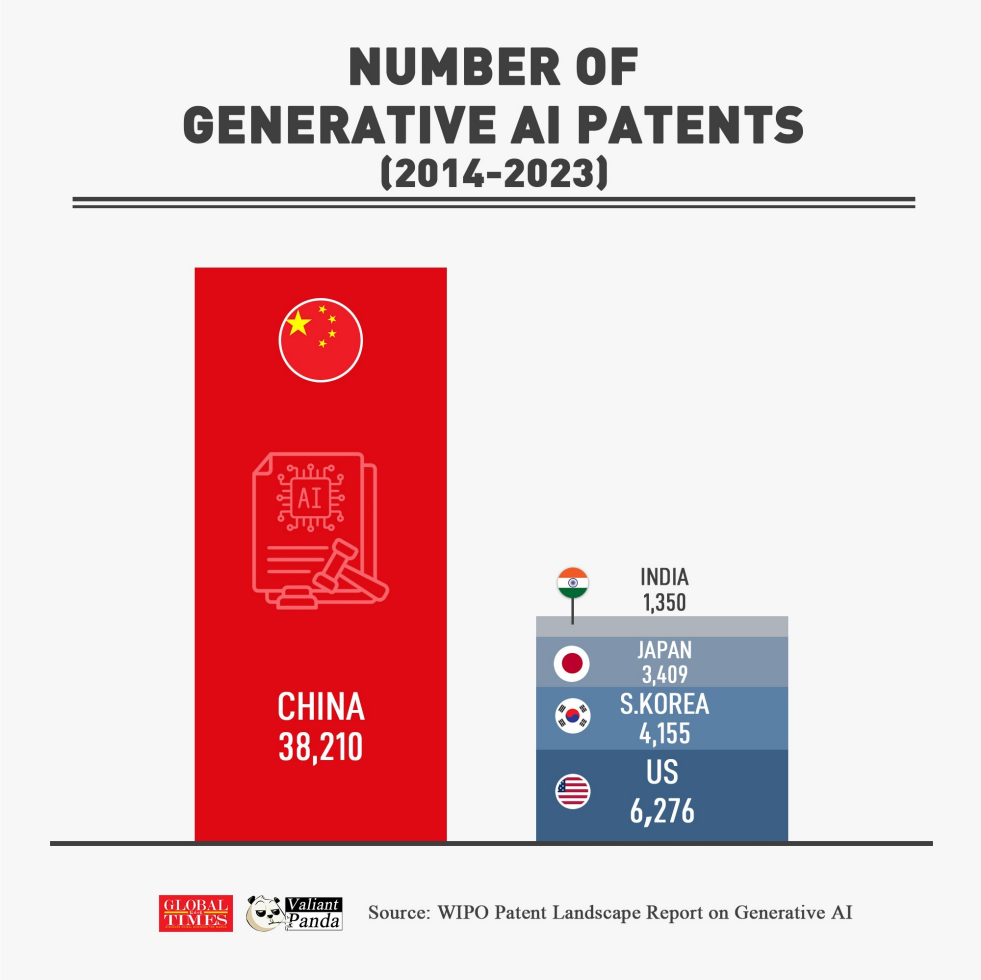
AI Patents: Quantity

- China is dominating in terms of the number of AI-related patents filed.





Source: https://www.wipo.int/pressroom/en/articles/2024/article_0009.html

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AI Patents: Quality

- China may be winning the AI patent race in terms of volume, but the US dominates in terms of impact
  - American AI patents are cited nearly seven times more than Chinese patents (13.18 vs 1.90 average citations)
  - Many Chinese firms file exclusively within China, while big tech firms, such as Huawei and Tencent, have a more diversified AI patenting strategy
  - Global companies such as Intel Corporation and Samsung Electronics file across 10 or more jurisdictions

Source: https://www.wipo.int/pressroom/en/articles/2024/article_0009.html

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Technological Advancement

- Gap between the leading models from US industry leaders and those developed by China's tech giants and start-ups is quickly closing

- The makeup of players developing China's top models are a mix of start-ups and tech giants
  - Baidu's Erniebot, Alibaba's Qwen, and Tencent's Hunyuan
  - Zhipu AI, Baichuan AI, Moonshot AI (Kimi), and MiniMax (Talkie)
  - And ***DeepSeek***

- China's open-source LLM ecosystem is gaining significant traction

Source: https://itif.org/publications/2024/08/26/how-innovative-is-china-in-ai/

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Key Observations

- China is the global leader in AI research and is neck and neck with the United States
- China’s research publications have less impact than US ones, with fewer top-cited research
- China is far and away the leader in number of AI patents, though it lags behind in patent quality
- China's AI landscape is rapidly evolving, with its tech giants and start-ups closing the gap with US industry leaders while also building a strong open-source LLM ecosystem

Source: https://itif.org/publications/2024/08/26/how-innovative-is-china-in-ai/

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중국의 AI 혁신 생태계 분석

세가지 관점: 1) 정책 지원 2) 인재 양성 3) 산업 연계

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Three Key Aspects

- **Government support in strategic planning and financing**
  - The government plays a proactive role in facilitating AI development, exhibiting robust strategic planning and execution capabilities
  - Chinese government provides financial support to nurture high-potential firms, including ones in less-developed inland areas

- **Cultivating universities and AI talents at core**
  - There is an emerging set of Chinese AI start-ups, supported by the prestigious Tsinghua University and other top Chinese universities, e.g., DeepSeek - Zhejiang University
  - Universities are launching massive AI-related programs as the demand for skilled AI professionals has surged

- **Industrial application and scaling AI innovation**
  - Leading companies in China are investing heavily in the development of AI, with a focus on key business scenarios to solve industry-specific problems

Source: https://carnegieendowment.org/research/2023/07/chinas-ai-regulations-and-how-they-get-made?lang=en&center=globa, World Economic Forum (2025), Blueprint to Action: China's Path to AI-Powered Industry Transformation

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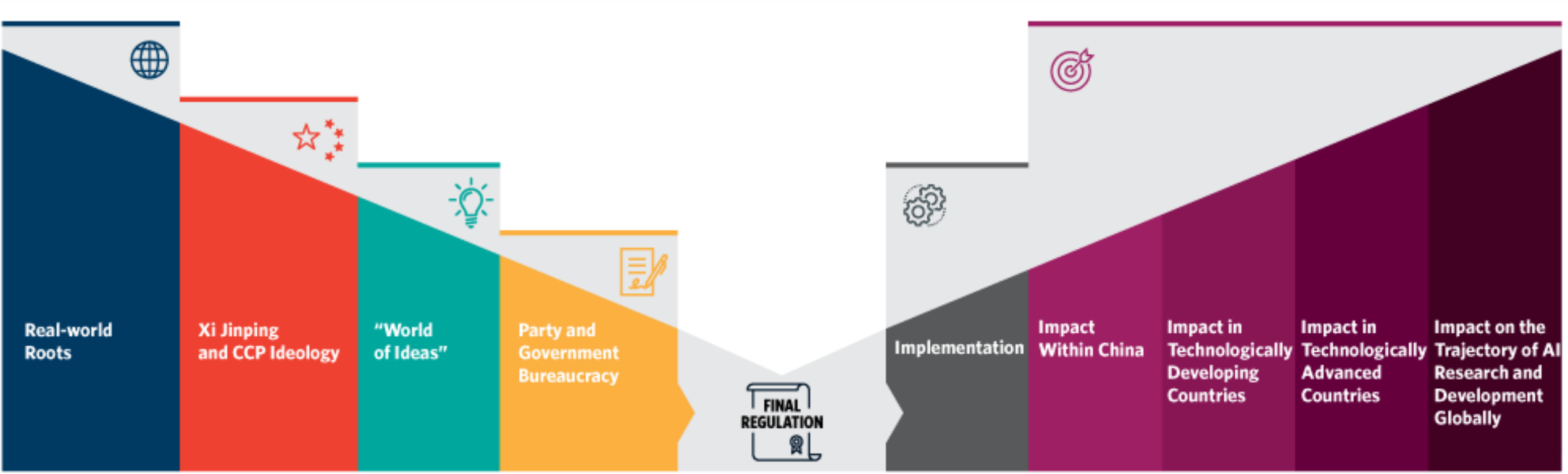
The ”Policy Funnel” of China

- Major government initiatives, including AI development, tend to proceed from left to right through this funnel (not in a linear fashion)



Source: https://carnegieendowment.org/research/2023/07/chinas-ai-regulations-and-how-they-get-made?lang=en&center=global

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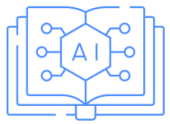
China's Strategic AI Development Plan

- China aims to become a primary AI innovation hub by expanding its core AI industry to over $140 billion by 2030, and to boost related sectors to $1.4 trillion in value during the same period

Step 1
2020

- AI technology and applications are synchronized with the world's advanced levels
- The AI industry is a new key driver of economic growth
- The application of AI technology provides a new way to improve people's livelihoods

Step 2
2025



- Major advancements to be made in the foundational theories of AI
- AI becomes a key driver of industrial and economic transformation in China
- Solid progress to be made in advancing the development of an intelligent society

Step 3
2030

- AI theories, technologies and applications to reach global-leading level, making China a key hub for global AI innovation.
- The breadth and depth of AI applications to be significantly expanded

Source: https://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm.

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Government Supports

- Government guidance funds
  - Between 2000 to 2023, Chinese government funds invested in 9,623 unique firms in the AI space through more than 20,000 transactions, totaling $184 billion
  - More spatially distributed than private funds
  - Often invest in AI firms before private VC funds, and these government investments attract subsequent private VC investments

- Subsidies
  - E.g., Beijing city introduced subsidies for firms buying domestically produced AI chips
  - E.g., Shanghai city provided companies with vouchers to access subsidized processing power from large state-operated data centers

Source: https://itif.org/publications/2024/08/26/how-innovative-is-china-in-ai/

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Efforts to Cultivate AI talent

- With China's rapid advances in AI technology, demand for skilled AI professionals has surged
  - E.g., autonomous driving, smart manufacturing and healthcare
- At least 535 universities in China currently offer AI-related majors, reflecting a growing emphasis on AI talent cultivation
- It's estimated that China accounts for nearly half of the world's top AI researchers (29% in 2019 to 47% in 2022)

Source: https://edu.cctv.cn/2024/08/08/ARTIbQhtfuACP9CUCBtmbuzu240808.shtml, https://macropolo.org/interactive/digital-projects/the-global-ai-talent-tracker/

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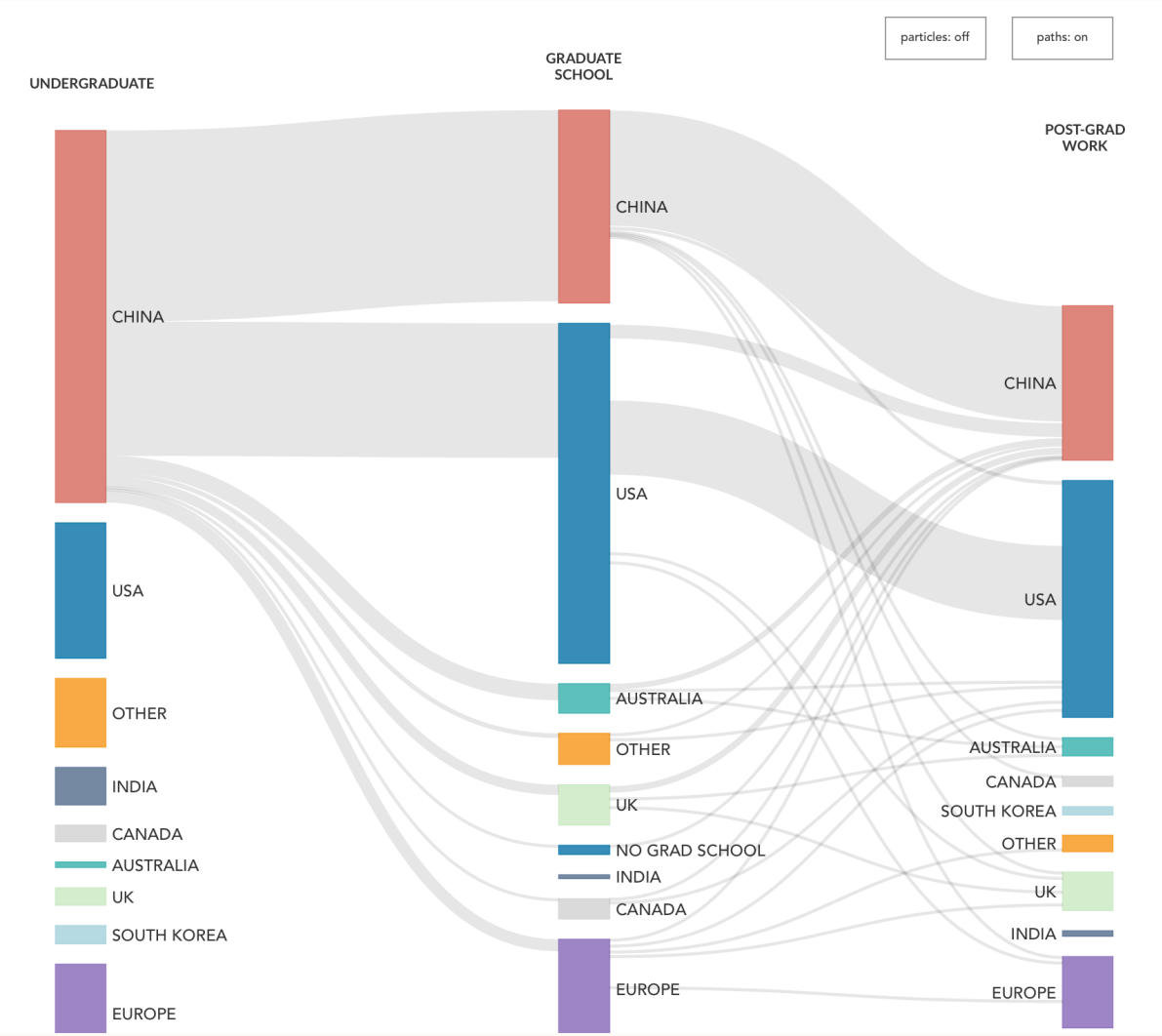
Efforts to Cultivate AI talent (Cont'd)

What are the career paths of top-tier AI researchers? (2022)



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Source: https://archivemacropolo.org/interactive/digital-projects/the-global-ai-talent-tracker/

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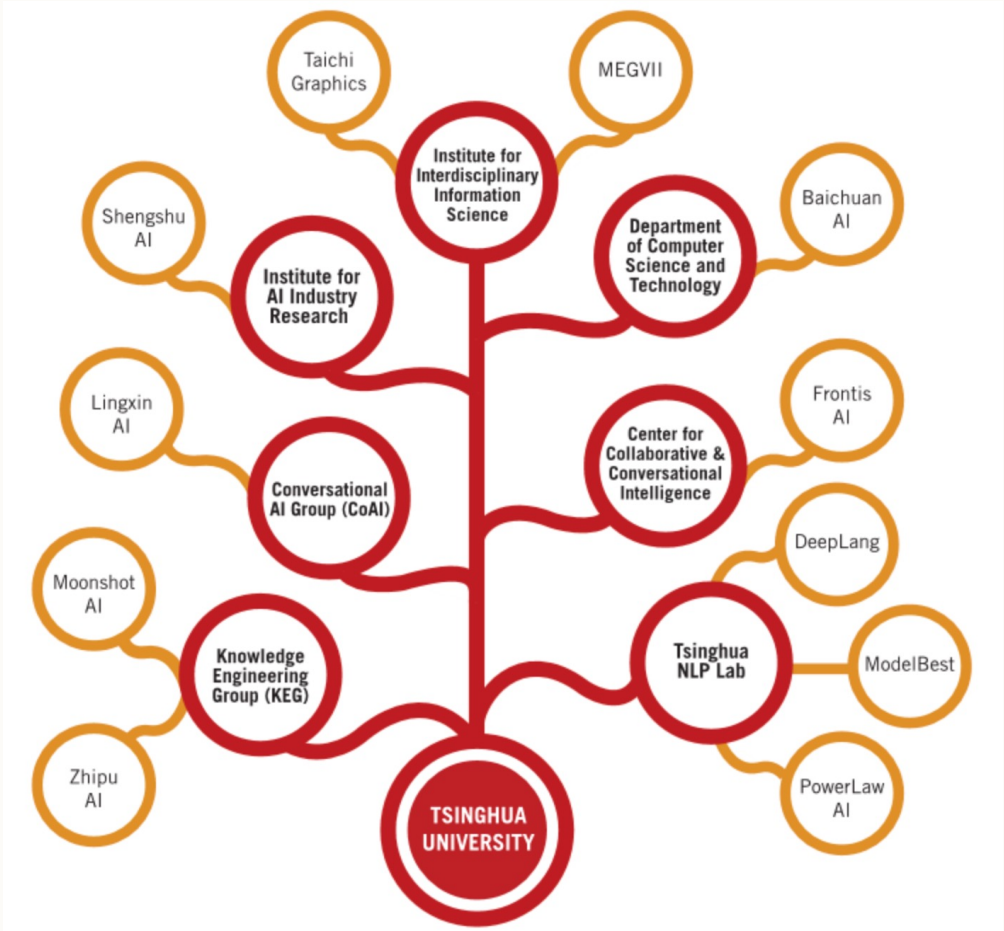
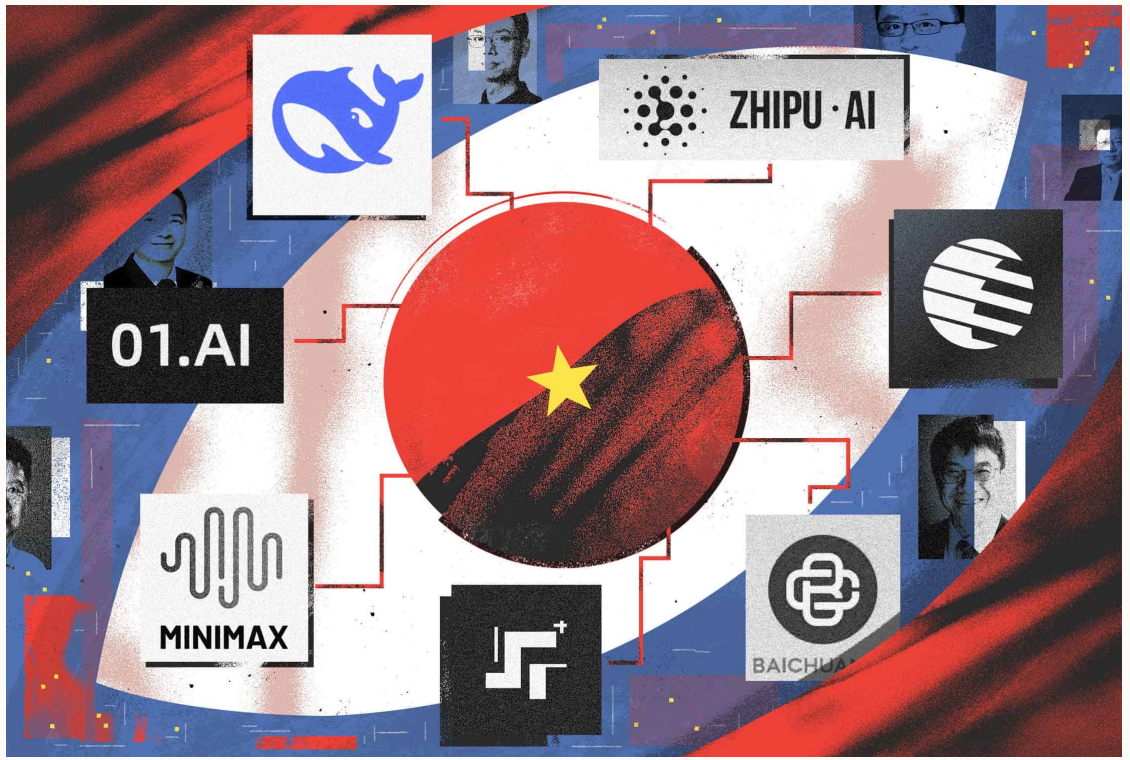
Efforts to Cultivate AI talent (Cont'd)

- Tsinghua Univ. has become renowned as a hub for top AI start-ups founded by its faculty and alumni, including China's new "AI tigers"





Source: https://www.thewirechina.com/2025/02/04/whos-who-chinas-ai-industry/, https://carnegieendowment.org/research/2023/07/chinas-ai-regulations-and-how-they-get-made?lang=en&center=global

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Scaling AI Innovation in Industry

- China's diverse industrial landscape creates a rich environment for AI adoption and innovation.
  - AI technology offers significant growth opportunities in key industries in China, e.g., manufacturing, automotive, retail, healthcare, finance, utilities and public services
  - E.g., AI & industrial robotics: There are 1.7 million industrial robots (51% of global demand) operating in China's factories in 2023

- The deep integration of AI technology with business use cases in China has become a catalyst for both 1) driving AI innovation and 2) accelerating industrial transformation
  - The country aims to become a primary innovation hub for the technology by expanding its **core AI industry to over $140 billion** by 2030, and to boost **related sectors to $1.4 trillion** in value during the same period.

Source: World Economic Forum (2025), Blueprint to Action: China's Path to AI-Powered Industry Transformation

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Scaling AI Innovation in Industry

- Top AI application scenarios in China by industry

Industrial manufacturing

– Production optimization
– Quality management

Automotive and autonomous transport

– Autonomous driving
– Intelligent cabins

Retail

– Hyper-personalized engagement
– Supply chain/logistics operations
– Virtual live host

Healthcare

– Assisted diagnosis and screening
– Healthcare delivery
– Assisted treatment
– Drug R&D

Finance

– Fraud detection
– Financial inclusion
– Digital payment
– Credit risk management

Renewable energy and utilities

– Energy management

Public services

– Smart city

Source: World Economic Forum (2025), Blueprint to Action: China's Path to AI-Powered Industry Transformation

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시사점과 향후 전망

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Key Takeaways from China AI

- **AI governance and regulatory developments**
  - China is actively shaping AI regulations, balancing innovation with state control
  - Policies focus on data sovereignty, ethical AI, and alignment with national priorities
- **Strategic investments and innovation**
  - Heavy government funding with following private sector funding fuels AI advancements
  - AI is integrated into key strategic industries, e.g., robotics, healthcare, finance, smart cities
- **AI research and foundational model development**
  - Rapid progress in LLMs, with tech giants and start-ups driving innovation
- **Global AI influence and competition**
  - China is expanding its AI footprint through partnerships and infrastructure projects
  - Open-source LLM initiatives are gaining traction and boosting global collaboration

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Key Challenges for China AI

- **AI regulation and government oversight**
  - A highly regulated AI environment can hinder innovation
  - Strict government oversight limits the flexibility of AI firms
- **Lower private Investment**
  - Much of its funding coming from state-directed sources
  - Inefficiencies in state-backed VC funds can lead to underwhelming results
- **AI talent drain**
  - China produces a high number of AI graduates, from institutions like Tsinghua University
  - However, top AI researchers often seek opportunities in the US due to global recognition and academic freedom
- **Barriers to global AI influence and trust**
  - Chinese AI companies face geopolitical skepticism, given the competition with US
  - Restrictions in countries over concerns of government influence

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