

Global Value and Practical Exploration of the AI Open Source Ecosystem: Unleashing the Flywheel Effect and Forging a “Born Global” Consensus



ModelScope



APRIL 2026



Overview of ModelScope

ModelScope (modelscope.cn) is China's largest open source AI model community, adhering to the principles of openness, neutrality, and non-profit operation. Initiated in November 2022 by the CCF Open Source Development Technology Committee and Alibaba, ModelScope is committed to providing high-quality, user-friendly, and scalable AI models and tools for global developers, researchers, and enterprises, driving the open sharing and industrial application of AI.

In the industrial sector, the platform currently aggregates over 1,000 top-tier tech institutions and enterprises. This includes flagship models from the Alibaba ecosystem, internet giants like Tencent, Baidu, Kuaishou, and Bilibili, as well as leading AI innovators such as DeepSeek, Zhipu AI, MiniMax, Moonshot AI, and StepFun. In academia, top-tier institutions including the Shanghai Artificial Intelligence Laboratory, Beijing Academy of Artificial Intelligence (BAAI), Tsinghua University, Peking University, Fudan University, and Shanghai Jiao Tong University consistently contribute cutting-edge research to co-build the ecosystem. Notably, alongside institutional contributions, the community relies heavily on the collective wisdom of individual developers, who have collaborated with professional teams to open source over 170,000 high-quality models and nearly 30,000 premium datasets.

To date, ModelScope has attracted over 25 million global users by providing over 100 million hours of free GPU compute, coupled with premium models, datasets, full-stack toolchains, and offline workspace benefits, firmly consolidating its position as the largest and most vibrant open source AI community in China.



Writing Group

Editorial Board

Shi Hongzhu, Chen Yingda, Chi Youlei, Yuan Yuan

Project Team

Zhou Jieqi, Fu Mengwen, Dai Junfeng

Writing Team

Dai Junfeng, Zhou Bo, Peng Jingzhi, Xu Wei, Xia Tianran,
Wang Zheng, Lan Yikun

Invited Research Partners

Tongyi Lab, Baidu ERNIE, Intern Community,
Chance Foundation



Preface

In the grand historical journey toward Artificial General Intelligence (AGI), the global tech community can no longer rely on seeking "optimal roadmaps" behind the closed doors of isolated laboratories. History repeatedly proves that in the uncharted territory of disruptive technologies, there is no pre-defined shortcut or ultimate model that guarantees certainty. We must acknowledge the collective "shared unknowns" of the field. **Recognizing that AI development cannot be built like an isolated cathedral, we must embrace the value of the open technology bazaar. The essence of an open source community is that it serves as a pre-market for technology, an arena for free choice, and a global network ecosystem for collaborative innovation.**

In the AI era, "stagnation is the greatest insecurity." Open source is the global collaborative process of "building the vehicle," and the AI open source community is the ultimate testing ground. The true path forward lies in broad community consensus and open source ecosystems. **Only open source can provide the optimal environment for global developers to disseminate AI technologies, incubate applications, manage risks, and achieve collective alignment.** Through their decentralized choices, developers continuously enhance AI capabilities, tools, and understanding while mitigating safety risks, ultimately fostering global collaboration. Industry practice consistently demonstrates that only through the "flywheel effect" of open source models can AI technologies and applications maintain vitality and achieve sustainable growth.

To systematically examine this proposition, ModelScope collaborated with industry partners to launch a comprehensive research project titled "AI open source Ecosystem Development," surveying over 200,000 users and collecting over 10,000 high-quality samples. Furthermore, Tongyi Lab and ModelScope jointly initiated the "Small Actions, Great Impact" competition under the theme "AI for Good," conducting in-depth interviews with winning teams selected from nearly 800 participants.

This report presents our systematic findings across five dimensions: **Evolutionary Paradigms of open source, Reconfiguring Globalization Pathways, open source Governance, Multiple Values of AI for Good, and Integration into Smart Living.** It aims to outline a comprehensive panorama of the AI open source ecosystem. It is crucial to recognize that global AI open source ecosystems not only drive technological paradigm shifts and productivity leaps, but also embody innovative economic, sociological, and public governance frameworks. They serve as the foundational infrastructure for fostering global collaboration, advancing cognitive equity, and promoting social good.

Contents

Preface	03
I、 Open Source Ecosystem: The Paradigm Shift from "Open Source" Code to "Open Resource"	06
II、 Born Global: From "Copy to China" to "Born Global"—Application and Technology as Dual Drivers of Global Dual Circulation	12
III、 Open Source Governance: Open Source is the Optimal Approach to Enhance Overall Safety Standards, and Strengthen Industry-Wide Trust, and Advance "AI Safety as a Public Good"	17
IV、 AI for Good: Bridging the Digital Divide with "Digital Prosthetics"—Teach to Fish, not Just Give Fish	22
V、 Smart Living: Transforming Eldercare, Education, Public Services, and Entertainment Powered by Open Source AI	28
VI、 Appendix: "Global AI Open Source Ecosystem Development" Survey Questionnaire	32

1. Open Source Ecosystem: The Paradigm Shift from "Open Source" Code to "Open Resource"

Wang Jian, founder of Alibaba Cloud and academician of the Chinese Academy of Engineering, emphasized that ultimate value of open source in the AI era extends far beyond sharing public code snippets or offering free API quotas. **It lies in establishing a virtuous cycle that promotes resource democratization, cognitive equity, and collaborative secondary innovation—transitioning from mere code openness ("Open Source") to comprehensive resource accessibility ("Open Resource").** With great transparency and sincerity, open source in the AI era dismantles the "black box" of advanced technology. By making model weights, training methods, and tools widely accessible, it gives everyday developers, entrepreneurs, and students the opportunities to access cutting-edge tech as scientists at global tech giants. Open source communities are not merely code repositories; they are dynamic reactors for innovation and secondary creation. They are generating an unstoppable flywheel effect that is not only reshaping economic productivity in the AI era but also redefining production relationships across the digital and physical worlds.

1.1 Core Logic: Demystifying Black Boxes, Expanding the Developer Base, and Establishing a Tech Bazaar

In the traditional software era, open source primarily focused on publishing code implementations, decoupling technical foundations from commercial applications to enable faster, cheaper software validation. However, the logic of

the AI era has fundamentally shifted. The training costs and technical complexity of large foundation models are prohibitively high, placing them beyond the reach of most small to mid-sized companies, average developers, and students. Meanwhile, the highly uncertain nature and emergent capabilities of large models require AI open source to be relatively "white-box." This enables collaborative exploration, error correction, and supervision, achieving the critical transition from "Open Source" to "Open Resource."

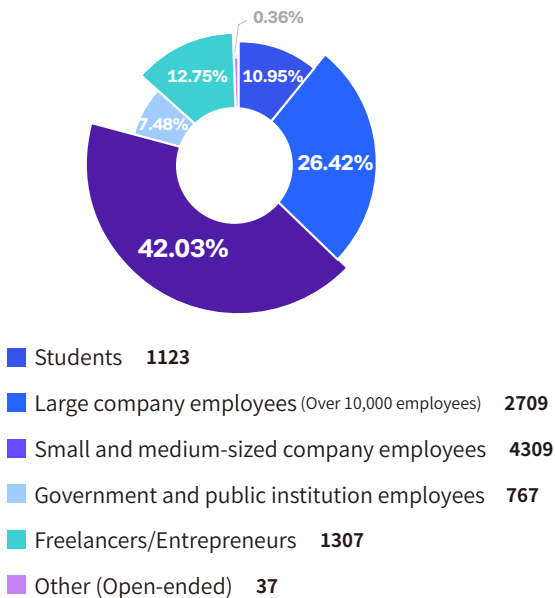
Today's developers have experienced a qualitative shift in their demands. They no longer just want to know how to use a model; they want to know why it works by dissecting it. The shift from open source to open resource is essentially an equal-rights movement leveling the technological playing field. When model weights, training scripts, and fine-tuning datasets are fully transparent, bottom-up engineering replication and deep business customization become possible—forming the root of cross-industry innovation.

During this industry transformation, ModelScope has demonstrated highly forward-looking, differentiated value. Unlike international platforms like Hugging Face, which focus heavily on asset hosting, ModelScope adopts a more pragmatic strategy centered on heavy ecosystem operations. It acts as a frontline "observation tower," directly engaging developers and integrating cutting-edge toolchains and compute resources. By capturing the authentic, hands-on needs of developers, it drives the

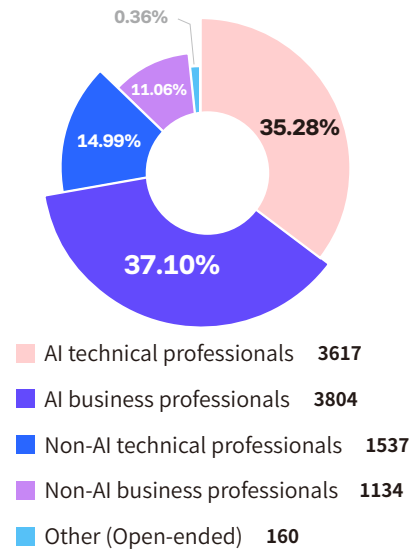
downward penetration of premium AI resources.[1]

This has triggered a revolutionary restructuring of the developer demographic. Recent survey data reveals a striking trend: AI business professionals now account for 37.10% of users, historically surpassing traditional AI technical professionals (35.28%). Even more profoundly, cross-disciplinary individuals with no AI technical or strong business backgrounds now make up 27.62%. Analysis shows that nearly 70% of users are fighting on the frontlines of enterprise scenarios, while the ecosystem also hosts over 30% composed of students, entrepreneurs, and freelancers.

Q1: [User Background] What is your current status? (Single selection)



Q2: [Job Responsibilities] What are your current learning and work responsibilities? (Single selection)



This demographic expansion proves that AI developers now form a "continuous spectrum." This spectrum ranges from hardcore tech geeks and Big Tech algorithm engineers to cross-disciplinary super-individuals seeking efficiency, industry newcomers, and ordinary students. AI open source is no longer a niche "geek toy"; it is the underlying engine powering all industries. When the number of people who "understand business needs" surpasses those who "write code"—especially as frontline workers leverage AI Coding and AI Agents to bypass programming barriers—AI technology officially moves past its long, costly validation phase into a golden era of explosive application.

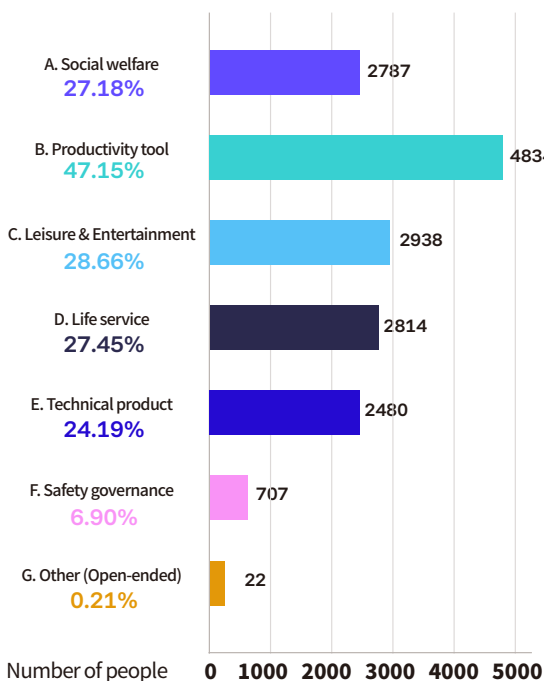
1.2 Application Ecosystem: Marginal Cost Reduction, Agile Trial-and-Error,

¹ ModelScope Community. ModelScope Community Public Data [EB/OL]. [2026-03-01]. <https://www.modelscope.cn/>.

and Multi-Party Collaboration Drive Ecosystem Growth

Data provides a clear view of the application landscape: "Productivity tool" leads overwhelmingly with 47.15%. This proves that tangible productivity gains remain the top priority for AI implementation. For developers, this is the easiest path to commercialization. Following closely is a second tier comprising "Leisure & Entertainment" (28.66%), "Life service" (27.45%), and "Social welfare" (27.18%). The near-equal distribution across these three categories reflects AI's massive potential in the consumer market, subtly reshaping human work, life, entertainment, and social welfare.

Q3: In which scenarios are the applications/agents you develop primarily used? (Multiple selections)



A deeper analysis of the economic logic behind the AI application boom reveals that its core lies in the dramatic decline of product development marginal costs. The development mechanism characterized by small steps, rapid iteration, and low-cost trial-and-error has enabled spillover technological dividends to permeate application ecosystems, where they can be adopted and monetized. In the traditional software development era, the long-tail market harbored vast suppressed and overlooked personWWtechnology companies and capital markets to strategically abandon or indefinitely postpone projects. This phenomenon reflects not individual profit-seeking biases of capital, but rather inevitable choices dictated by bounded rationality and resource limitations.[2]

However, with the robust support of open source AI capabilities and the full-stack toolchain, the paradigm has undergone a fundamental transformation. The open availability of powerful foundational models means developers no longer need to invest tens of millions — or even hundreds of millions — of dollars in building AI systems from scratch. Advanced fine-tuning toolchains and Coding Agent code generation technologies have reduced product development cycles from months to days or even hours. Vibrant, self-driven developer collaboration, iterative processes, and monitoring mechanisms ensure seamless upstream-downstream integration, complete application systems, and sustainable growth potential. This dramatic reduction in product development marginal costs has enabled modern development

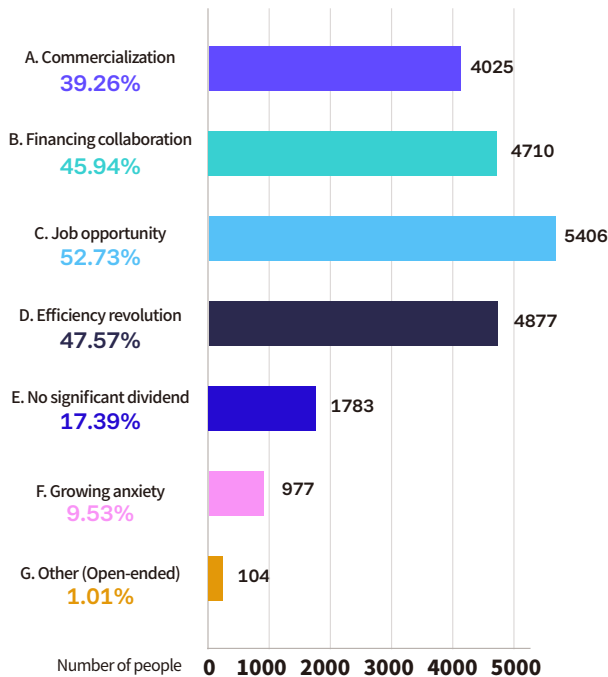
frameworks — characterized by "**small steps, rapid iteration, low-cost experimentation, and multi-party collaboration**" — **to operate effectively within small teams.** Spillover technological benefits are rapidly permeating expansive application ecosystems, allowing previously unfeasible minor requirements to be cost-effectively implemented and monetized. Consequently, the core competency framework of community developers is undergoing a significant shift: from basic code writing and model training toward delivering exceptional engineering products that precisely address real-world business pain points. This evolution aligns with the emergence of new business models like the One-Person Company (OPC). By leveraging an open source model as the cognitive core and AI programming assistants as operational tools, a highly commercially astute super individual can achieve the business closed loop that previously required an entire product development team to accomplish.

1.3 Incentive Cycle: Moving Beyond Passion Projects to Real Career Returns

Open source contributions are evolving into a defining identity marker and career credential in the AI era, enabling developers to reap tangible rewards from community engagement. **It is crucial to dispel the misconception that developers merely "work for passion" without sustainable returns. Open source is genuinely transforming professional development trajectories and creating positive**

incentive loops. Empirical case studies have shown that adopting open source AI technologies has transformed cross-disciplinary professionals at risk of unemployment into highly sought-after assets for major technology companies. Survey data shows that 52.73% of participants secured real job opportunities through open source contributions, 45.94% accessed funding channels and industry partnerships, and 39.7% generated actual income. Open source portfolios now serve as a litmus test for evaluating AI proficiency and hands-on capabilities, establishing contributors as recognized assets in the AI talent market. This high return rate creates a virtuous cycle: enhanced talent attraction drives community engagement, fostering a self-reinforcing ecosystem where open source adoption grows and benefits multiply. Developers increasingly recognize that delivering authentic code contributions to mainstream open source projects — creating measurable impact — has become a strategic pathway to career advancement, managing uncertainty, and entrepreneurial practice in the AI era.

Q4: Impact of Open Source communities/AI on your career (Multiple selections)

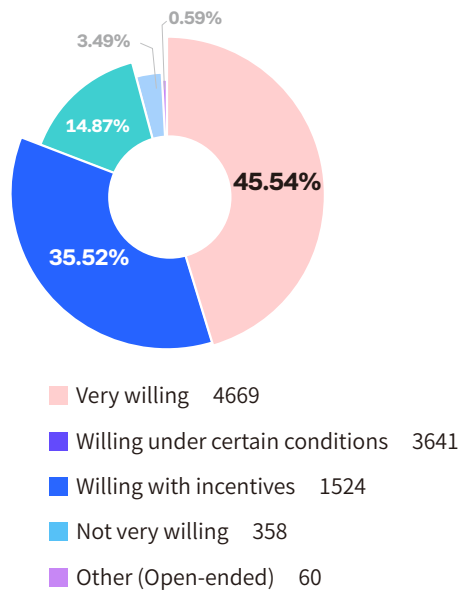


In the face of this profound paradigm shift, public understanding urgently requires a thorough update. Global open source community platforms like ModelScope are not merely static, isolated digital model repositories. They serve as comprehensive ecosystems empowering developers to "acquire credentials" in the AI era, functioning as digital-era "LinkedIn"-style infrastructure, and acting as incubators for super individuals and OPC professionals. From this perspective, the prosperity of OPCs and ModelScope's ecosystem empowerment are two sides of the same coin—a unified entity integrating online and offline operations. Without the high-quality, low-barrier resource libraries provided by deep open source communities, One-Person Companies would be building on sand. Without countless frontline practitioners driving business operations,

open source ecosystems would devolve into lifeless cities. Therefore, ModelScope community's strategic positioning naturally serves as a leading benchmark for the AI open source and OPC industries, guiding the next wave of digital productivity growth.

What best exemplifies the spirit of open source is the highly reciprocal network effect demonstrated by developer communities. After drawing nourishment from the community and benefiting from predecessors' wisdom, the vast majority of users choose not to claim their achievements as personal property. Instead, they demonstrate a strong willingness to share their improved or innovative results through secondary open-sourcing. **Survey data reveals that 96% of developers explicitly stated their readiness to engage in secondary open-sourcing, ensuring the sustainable development of the community's shared technical knowledge pool.** This has significantly accelerated the global iteration frequency of AI technologies, making the wheels of technological evolution spin ever faster.

Q5: Willingness to open source your derivative development work based on community resources (Single selection)



This demonstrates that open source in the AI era has transcended mere code sharing, evolving into a profound productivity revolution and a movement for cognitive equity. The historic transition from open source to open resource has dismantled technical black boxes, empowering developers to "not only understand how things work but also why they work" in the AI landscape. In this process, the dramatic reduction in R&D marginal costs has fueled the widespread rise of One-Person Companies (OPCs), enabling low-cost adoption, rapid validation, and iteration of long-neglected niche demands and disruptive innovations— ultimately translating them into tangible commercial and societal value.

2. Born Global: From "Copy to China" to "Born Global"—Application and Technology as Dual Drivers of Global Dual Circulation

As Jensen Huang has noted, the software era evolved at a rate of 100 times per decade, while AI iterates at a rate of 1 million times per decade. Amid the rapid development and swift changes in global AI technology, the global tech community has recognized a highly significant fact: the journey of Chinese AI developers has long transcended the early phase of simply localizing overseas applications through translation, reskinning, or adaptation. They have entered a new stage—one defined by exporting "application paradigms" and "technological contributions" to the world.

The validation of this narrative marks a fundamental transformation of China's AI ecosystem — from a "follower" in foundational technologies to a "contributor" and "leader" in the global ecosystem. At this historic juncture, the role of AI open source communities has changed fundamentally. They are no longer static, isolated code repositories or niche platforms for geek communities. Instead, they have become fertile ground for nurturing innovative application ecosystems across all scenarios. They serve as a core hub for multilateral collaboration and the "snowball effect" of technology and commerce, and as a bridge for strengthening the global technical community and breaking down geopolitical technological silos. In the new era of "Born Global," Chinese developers are driving development through a robust dual-engine strategy of "application + technology," building a vibrant global dual-circulation framework connecting China and overseas partners.

2.1 Crossing the Watershed: Substantive Restructuring of Global Open Source Forces and Redefinition of De Facto Standards

According to data from the World Internet Conference, the latest authoritative statistics on the global open source ecosystem show that China accounts for 26% of the world's developer base — firmly ranking second globally — a key indicator of future ecosystem potential. At the industrial level, usage data serves as the most sensitive barometer of this underlying revolution. [3] Monitoring data from OpenRouter, a global third-party AI model API aggregation platform, shows that during February 16-22, 2026, weekly usage of Chinese models surged to 5.16 trillion tokens, surpassing U.S. model usage of less than 3 trillion tokens during the same period. Among the top five most-used model families globally, Chinese models occupy four positions, all of which are open source. It must be emphasized that OpenRouter is a free market driven entirely by global developers' real investment and their choices — they vote with their feet. Such dominance is not achieved through administrative directives but purely through market selection. Over the past year, the share of Chinese large models in token consumption on the OpenRouter global market grew by 421%. [4]

Case Study: Qwen's Contribution and Value to the Global Open Source Ecosystem

To date, Qwen has open sourced over 400

12 ³ China Economic Net. World Internet Conference: Software becomes a bridge connecting technological innovation and industrial innovation [EB/OL]. (2024-11-21)[2026- 03-01]. <https://www.cnstock.com/commonDetail/584742>.

⁴ OpenRouter. OpenRouter Model Rankings Public Data [EB/OL]. [2026-03-01]. <https://openrouter.ai/rankings>.

models spanning diverse modalities and scales, with cumulative downloads exceeding 1 billion and derivative models surpassing 200,000. It has firmly established itself as the world's leading open source large model. Its applications range from lightweight edge deployments to large-scale core business operations. Qwen's global value has transcended the scope of a mere technical tool, evolving into the de facto standard underlying model for the global AI industry.

At the pinnacle of industrial ecosystems, Qwen has earned comprehensive endorsement from global tech giants. NVIDIA fine-tuned it to create a top-ranking open source reasoning model. Microsoft built a powerful GUI visual intelligent agent using Qwen-VL. Amazon adopted it as the core cognitive engine for embodied intelligence and physical AI development. All of these demonstrate its irreplaceability in the most demanding industrial scenarios. Leading teams including DeepSeek use Qwen as their core distillation foundation to push reasoning boundaries. Even TML, the multi-billion-dollar startup founded by former OpenAI executives, uses Qwen as a benchmark for validating foundational experiments and strategic distillation approaches.

The deeper historical significance lies in Qwen's advantages: support for over 201 languages, leading technology, comprehensive capabilities, and a mature ecosystem. These strengths led Singapore's National Artificial Intelligence Program to select Qwen as the core architecture for a Southeast Asian language

model. Qwen has also been widely applied in the construction of the UAE's national-level reasoning model and the development of dedicated AI agents for South Korea's telecom giants, while broadly supporting the flourishing of Japan's foundational AI application ecosystem. This marks a true paradigm shift for Chinese AI developers and the broader technology ecosystem — from "Copy to China" to "Born Global" — advancing global AI inclusiveness and shared prosperity through a solid technical foundation and an open, collaborative stance.

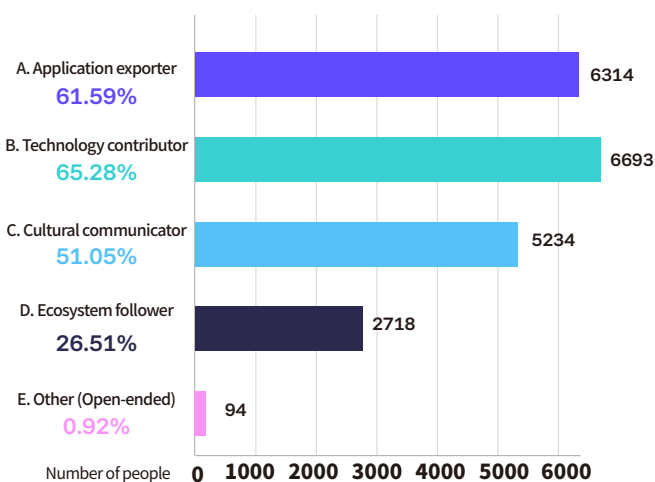
2.2 Global Resonance: Chinese Developers Driving Global Collaboration Networks Through Dual Drivers of Technology and Applications

As foundational capabilities have advanced rapidly, the Chinese AI developer community is undergoing a profound mindset shift — from passive "learners" looking up to others, toward "contributors" and "creators" who engage as equals and even lead the way. This systemic change is not blind technological fervor but rather a technological confidence grounded in solid technical foundations. It constitutes the strongest intrinsic driving force propelling the Chinese AI ecosystem toward global prominence. In this transformation, leading Chinese open source platforms such as ModelScope have played a pivotal role as "super incubators" and "ecosystem enablers."

According to the survey on Chinese developers'

future global positioning, within the current large developer base, only 26.5% of community users still conservatively position themselves as traditional "Ecosystem Followers." In stark contrast, 65% of users have resolved to become "Technology Contributors" who lead technological trends. "Technology Contributors" (65%) and "Application Exporters" (61.6%) achieved the highest resonance, both surpassing the 60% mark. Over half of respondents also believed they should assume the role of "Cultural Communicators" (51.1%). This reflects the strongest aspirations of Chinese developers: they are eager to contribute core code, model capabilities, and full-stack technologies on the international stage. They also want to participate deeply in setting de facto standards for AI safety and governance. Beyond that, they aspire to leverage China's strong global engineering implementation capabilities and keen market-product intuition to promote AI applications more actively, securely, and inclusively worldwide.

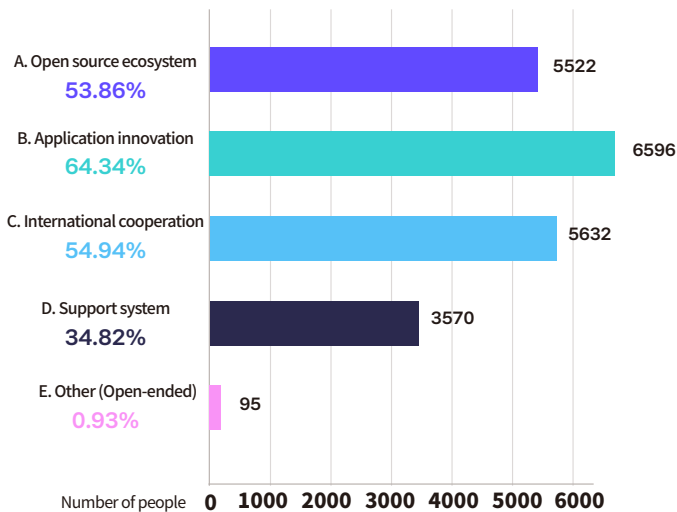
Q6: Role Positioning of AI Developers in a Globalized Context (Multiple selections)



When addressing the strategically important question of "how to substantially strengthen globalization efforts," "Application Innovation" emerged as the top priority with 64.3% support — developers' first choice for enhancing global influence. This data carries significant strategic implications. Developers clearly recognize that while foundational technologies and trillion-parameter models remain indispensable cornerstones, the real differentiators in global market competition are outstanding applications that deliver exceptional user experiences and solve real-world pain points. Whether it is general-purpose AI agents, AI-powered customer service for cross-border e-commerce, AI image generation tools for short-video platforms, or specialized technical solutions for vertical industries, the ability to rapidly transform advanced technologies into productive tools represents the strongest natural advantage nurtured by China's rich digital ecosystem.

"International Cooperation" (54.9%) and "open source Ecosystem" (53.9%) followed closely behind. This clearly demonstrates that developers possess a mature global perspective. **They understand that in the tech world, "once the door is opened, it cannot be closed."** Through open collaboration and ecosystem co-construction, global wisdom can be fully pooled. This open attitude has directly prompted a notable shift in overseas developers' attitudes toward the Chinese ecosystem: from early arrogance and neglect, through cautious curiosity, to active exploration and in-depth learning driven by the appeal of applications and performance. A vibrant, two-way interactive ecosystem has taken shape.

Q7: Key Areas Requiring Enhancement for Global AI Adoption (Multiple selections)



In this process, communities such as ModelScope have demonstrated strong ecosystem integration capabilities. They have broken down barriers to deep interaction between Chinese and overseas models, developers, and AI applications, giving rise to a series of notable cross-border collaboration models. **For example, empowered by ModelScope, China's rich collection of fine-tuned models (LoRA) achieved widespread popularity in overseas markets, becoming a go-to tool for global AI art creators and driving over 100,000 downloads and uses abroad.** In the area of software-hardware integration, the open source community supported American and Spanish developers in interactive secondary development of AI educational robots' soccer-playing functions, transforming rigid code into dynamic physical movements. Through innovative application-layer approaches and combined open source co-creation in both software and hardware, the

Chinese open source community is working to become not only the best window for overseas developers to understand China's AI technology and application ecosystem, but also a central hub connecting global cutting-edge ecosystems with hundreds of millions of developers.

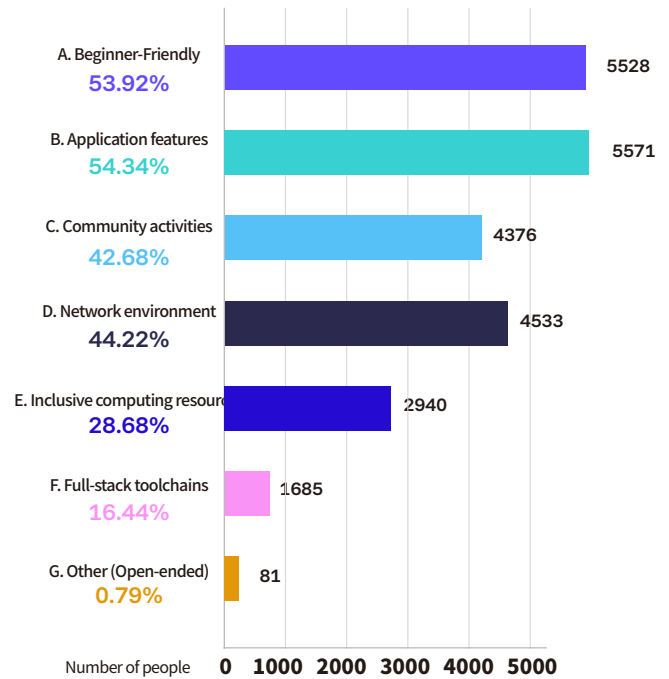
2.3 Community Value: Deep Operations Building Differentiated Value and Establishing a Unique Global Ecological Niche

In the macro-level competition of the global open source ecosystem, demand-side expectations have undergone fundamental changes — shifting from parameter competitions among top players in technical forums to a collective focus on practical value. For a long time, leading overseas open source communities such as Hugging Face have inevitably prioritized scientific exploration of foundational models, gradually evolving into an "academic arena" for benchmark competitions and leaderboard rankings among major tech giants and leading laboratories. Chinese developers, however, have demonstrated near-instinctive commercial acumen and operational execution in both "engineering implementation" and "product application." This distinctive trait, cultivated through 20 years of competitive market dynamics in China's internet landscape, has directly shaped the unique and hard-to-replicate international strategies of Chinese open source communities like ModelScope community. **As of March 2026, ModelScope has aggregated over 170,000 models, nearly 30,000 datasets, and 30,000 Studios, comprehensively**

covering natural language processing, multimodal AI, computer vision, and scientific computing.[5]

According to in-depth user behavior survey data, the core reason developers firmly and frequently choose Chinese AI open source communities lies in the exceptional product experience and vibrant ecosystem features. "Application Features" (54.34%) and "Beginner-Friendly" (53.92%) constitute the two most critical drivers of attraction. Their nearly identical proportions are no coincidence. This reveals an important industry truth. Compared to overseas communities that often present high academic barriers and steep learning curves, Chinese communities have built an "experience moat" that overseas competitors find difficult to surpass in the short term. They achieve this by offering Studios (cloud-based runtime environments ready for immediate use), AI competitions with high engagement and entertainment value, simplified development environments, and comprehensive step-by-step tutorials that enable a zero-cold-start experience. Through deep operations, the community has stimulated its vitality and self-governance.

Q8: Core Reasons for Choosing Chinese open source Communities (Multiple selections)



This set of data decisively challenges external prejudices. It proves that Chinese AI open source communities such as ModelScope are no longer "second-best alternatives" adopted merely due to network limitations or compliance requirements. They have earned developers' active embrace through genuine product strength and an irreplaceable community atmosphere. The core competitiveness of China's AI open source ecosystem in global competition rests on two pillars: the powerful soft power formed by deep, meticulous operations and an exceptional user experience, and the solid hard power forged by efficient end-to-end toolchains and cutting-edge foundational model technologies. The community value woven from these two elements is becoming a trusted anchor for developers.

3. Open Source Governance: Open Source is the Optimal Approach to Enhance Overall Safety Standards, and Strengthen Industry-Wide Trust, and Advance "AI Safety as a Public Good"

Safety is both an essential requirement for large model development and a prerequisite for their widespread application. However, AI technology has introduced entirely new safety demands that existing mechanisms struggle to address directly. First, model technology evolves with extreme dynamism and unpredictability, requiring safety solutions to keep pace with rapid iterations in model capabilities and application scenarios. This demands agile governance frameworks capable of swift responses and continuous refinement, forming a dynamic cycle of "evolving alongside development, governance, and improvement." Second, the paradigms have shifted from "AI Security" to "AI Safety"—transcending traditional focus on system integrity, data protection, and defense against unauthorized access to encompass broader implications. As AI permeates every facet of social life—from workplace assistance to emotional interactions—disrupting human-machine relationships, it necessitates comprehensive evaluation of its impacts on core human rights and long-term societal development (AI Impact). This advanced Safety concept requires governance approaches that extend beyond rule compliance and standardization, embracing broader ethical considerations and consensus-building processes.

Faced with these unprecedented challenges, no single entity can address them independently. Therefore, it is imperative to adopt an ecological synergy approach, treating AI Safety as a "public good" that requires collective societal efforts for

its construction and maintenance. On this basis, open source becomes the optimal pathway to enhance overall safety standards and strengthen industry-wide trust.

In this process, open source communities with robust ecosystems and dynamic vitality play an indispensable core role. Through observation of open source activities on the ModelScope Community and developer surveys, the support of open source initiatives for large model safety can be summarized into three key aspects.

3.1 Multi-stakeholder Governance: Achieving Multi-stakeholder Governance and Global Safety Assurance through Transparency and Public Participation

Open source provides exceptional accessibility and transparency, enabling developers to directly monitor and test technologies. This collaborative approach facilitates the joint discovery and patching of safety vulnerabilities while fostering solution exploration. Taking the ModelScope community as an example, as of March 2026, the platform has aggregated over 170,000 models and 26,000 datasets, comprehensively covering natural language processing, multimodal systems, computer vision, and scientific computing domains. This open-access model allows models to undergo rigorous validation across complex real-world scenarios. Beyond delivering models themselves, open source

projects typically include technical documentation, inference code, and application examples, with detailed disclosures of training data composition, model architectures, optimization strategies, and test results. These resources empower developers to conduct in-depth exploration and iterative testing, promptly sharing safety vulnerabilities and collaboratively developing solutions. This crowdsourced risk identification and mitigation model effectively addresses critical governance challenges in large-scale AI systems. Unlike traditional technologies, safety risks in large models often emerge during highly complex and diverse usage scenarios. Given the ongoing evolution of industry frameworks, potential vulnerabilities remain difficult to predict or fully identify during early development stages. Consequently, the industry will continue to face persistent challenges in risk management and safety governance for extended periods, constrained by shared cognitive blind spots. In response to this challenge, **open source ecosystem has established the most extensive testing ground, enabling technologies to undergo high-frequency trial-and-error in infinitely diverse scenarios. This approach maximizes the exposure of potential vulnerabilities, thereby facilitating continuous iteration of risk management strategies and safety solutions.**

Taking DeepSeek as an example, the release of its open source model DeepSeek-R1 quickly garnered widespread attention and scrutiny from global tech communities and safety organizations. Thanks to its high transparency and accessibility, numerous safety teams were able to conduct comprehensive

safety testing in real-world complex scenarios. For instance, U.S. cloud safety platform Wiz Research promptly identified potential risks in its associated database containing sensitive information such as leaked backend data and operational details during detection, immediately notifying DeepSeek's team and issuing warnings while proposing safety reinforcement recommendations aligned with major public cloud infrastructure providers.[6] Additionally, multiple AI Safety platforms including Hiddenlayer identified vulnerabilities through red team assessments, particularly regarding information leaks during specific jailbreak attacks and CoT (Chain-of-Thought) reasoning processes. [7] This extensive testing and feedback not only helped identify infrastructure vulnerabilities in specific execution environments but also revealed industry-wide safety risks like CoT data breaches—common challenges faced by all inference models rather than DeepSeek alone. Such insights have enhanced understanding of shared risks in inference models, enabling the entire industry to develop more targeted preventive measures.

Taking the recent AI agent technology solution "OpenClaw" as another example, after being open sourced and widely adopted by the technical community, it rapidly exposed numerous safety incidents and vulnerabilities in practical use. These included not only accidental deletion and leakage of local data on client devices, but also high-risk scenarios such as malicious hijacking of local superuser privileges, tampering with plaintext interaction logs, and introduction of malicious commands through unverified third-party plugins. In response

18 ⁶ China News Network. The total number of people with disabilities in China reaches 85 million [EB/OL]. (2021-03-31)[2026-03-01]. <https://www.chinanews.com/sh/2021/03-31/9444275.shtml>.

⁷ United Nations Department of Economic and Social Affairs. World Population Prospects 2024 [R]. New York: United Nations, 2024.

to intense community feedback, the OpenClaw team swiftly implemented multiple rounds of iterative updates.[8] While addressing core vulnerabilities, they strategically enhanced system-level defenses. Beyond strengthening virtual isolation and sandbox mechanisms to restrict model runtime environments, the team introduced additional safety safeguards at the AI gateway interaction layer, including user identity authentication, command filtering and review, as well as secondary confirmation for critical hazardous operations.[9]

3.2 Public Good: Open Source as the Optimal Arena for Sharing AI Safety Capabilities and Resources

Open source provides the optimal arena for sharing AI Safety capabilities and resources, effectively actualizing the concept of "AI safety as a public good" and significantly elevating industry-wide safety standards. The open source ecosystem not only delivers the models themselves but also aggregates a rich repository of safety resources. One category includes substantive safety technologies and tools, encompassing safety datasets, safety guardrail models, and evaluation standards. These resources directly empower developers to strengthen the safety foundation for model deployment and downstream applications, while enabling objective assessments of model accuracy, robustness, and generalization capabilities. Taking ModelScope as an example, relying on automated model safety evaluation frameworks (see Figure 1), developers can significantly improve the efficiency and quality of their assessments, achieving highly effective risk management. The accompanying safety guardrail models and tools (see

Figure 2) provide a robust defensive barrier for real-world commercial implementation.

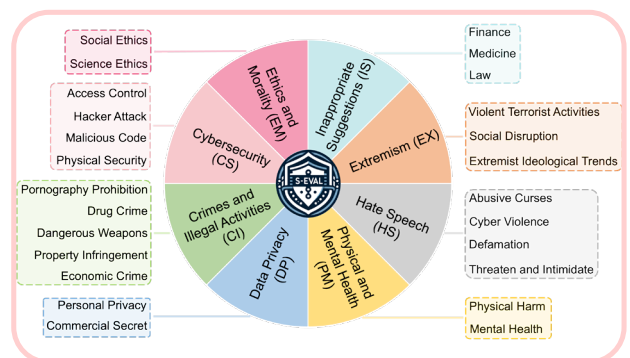


Figure 1 Example of a model safety evaluation technical framework in ModelScope

⁸ Zhejiang Open University, Alibaba Group. 2025 "Silver Hair + AI" Application Trend Report [R]. Hangzhou: Alibaba, 2025.

⁹ DEY M, JAMBHALE R. Creator economy statistics by market size, startups, revenue and facts[EB/OL]. (2025-01-10)[2026-03-01]. <https://electroiq.com/stats/creator-economy-statistics/>.



Figure 2 Example of open source model safety guardrails in the ModelScope

The second category is the interactive learning and knowledge exchange ecosystem sustained by the community. As the most active AI open source community in China, ModelScope has attracted more than 25 million users and over 1,000 contributing organizations as of March 2026, with over 10,000 of highly valuable technical discussions taking place

every month.

Developers frequently share frontline practical experiences here—from environmental safety protocols for model deployment to data desensitization and privacy protection techniques for specific data types. Through extensive debate, experience transfer, and technical mentorship, a high-density knowledge-sharing and feedback network has formed. Consequently, this powerful community ecosystem can truly transform AI safety knowledge and capabilities into an inclusive "public good." It is shared indiscriminately with developers of diverse technical backgrounds, university students, and startup teams. This fosters continuous expansion and deepening of AI safety knowledge, capabilities, and resource pools across the industry through a benign synergy of "consultation, co-construction, and sharing."

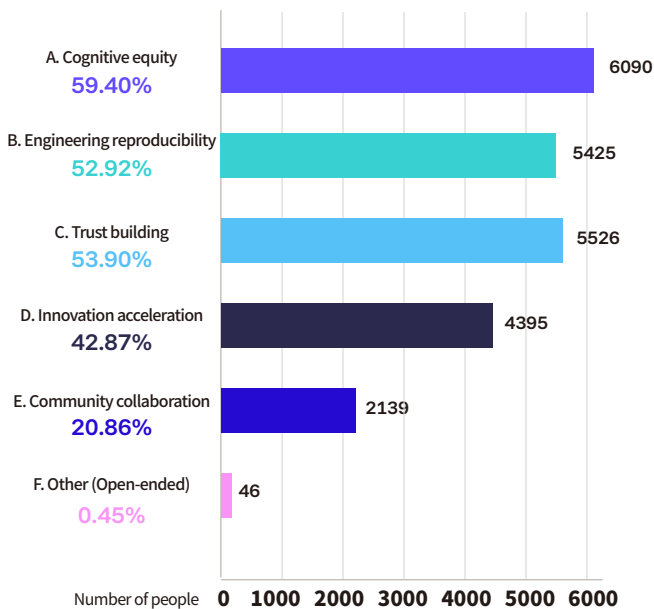
3.3 Trust Foundation: Demystifying AI's Black Box, from "Understanding Tech" to "Enhancing Trust"

Through collaborative participation, feedback mechanisms, and interactive engagement, open source helps demystify the "black box" of AI. This deepens public understanding of model technologies, fostering trust built upon actual technical literacy. Current public concerns regarding AI risks often stem from a fear of unknown technical principles and a perceived lack of control. In open source ecosystems, the comprehensive disclosure of model architectures, training data composition, parameter weights, and evaluation

benchmarks effectively eliminates the trust deficit caused by information asymmetry. Our research reveals that among developers' responses to the question "What defines the core value of deep open source?", "Trust Building" (53.9%) ranks second only to "Cognitive Equity." Developers widely recognize that highly transparent technical disclosures provide them with a clearer understanding of a model's safety and capability boundaries. The ability to personally download models, conduct stress testing, and dissect operational mechanisms facilitates the timely identification and resolution of vulnerabilities, transforming developers into active "supervisors" and "core co-builders" of AI safety.

permeate broader public consciousness as open source models are widely integrated into downstream applications across various industries. Throughout the entire lifecycle of learning, researching, deploying, and using AI, the general public can intuitively grasp how AI models operate and recognize their limitations. This "seeing is believing" verifiability not only strips away the mystique of AI technologies but also transforms public skepticism and anxiety into rationally grounded confidence based on scientific understanding. Ultimately, this collective consensus forged through broad participation lays the most solid foundation of trust for the large-scale implementation and sustainable development of AI technologies in the real world.

Q9: Core values of deep open source (Multiple selections)



Furthermore, this technical trust—pioneered by professional developers—will naturally and effectively

4.AI for Good: Bridging the Digital Divide with "Digital Prosthetics"—Teach to Fish, not Just Give Fish

When examining the social value of AI, a prevalent strategic oversight is reducing it merely to a tool for economic competition and productivity leaps, while neglecting its egalitarian nature as social infrastructure. When analyzing the global accessibility tech ecosystem through a research lens, a highly disruptive and radical truth emerges: **"AI for Good" is neither a condescending charitable act rooted in traditional biases, nor merely a collection of public welfare applications. Instead, it utilizes technological equity to grant marginalized groups an irrevocable "second life," fundamentally transforming the paradigm of philanthropic aid.**

To fully comprehend the inevitability of this paradigm shift, we must confront a staggering set of macroeconomic data. According to the World Health Organization's Global Population Baseline Survey, **approximately 1.3 billion people worldwide currently suffer from varying degrees of disability, accounting for 16% of the global population.** [10] In a traditional commercial market driven by traffic monetization and economies of scale, this demographic constitutes a massive "economic blind spot." Allocating substantial resources to develop highly customized, complex hardware-software integrated systems for a marginalized group—representing less than 10% of the population with severely fragmented needs—inevitably leads to negative returns on investment, creating a developmental deadlock. [11] Conventional CSR (Corporate Social Responsibility) initiatives often provide only generalized accessibility adaptations, lacking the capacity to address the concrete survival

challenges and profound inconveniences faced by individuals with disabilities in highly complex physical environments. However, with the Cambrian explosion of open source AI models, datasets, and toolchains, previously astronomical R&D marginal costs are experiencing an unprecedented, exponential decline. This breakthrough enables the long-tail, customized demands of the global 1.3 billion "minority" population to be met—for the first time in human history—through high-quality, low-cost, and sustainable solutions, making the vision of "AI for Good" more attainable than ever.

In September 2025, Tongyi Lab collaborated with ModelScope, Alibaba Foundation, and the OpenAtom Foundation to push this technological equity from foundational logic into industrial reality by hosting the landmark "Small Actions, Great Impact" competition. The event strategically targeted four "AI for Good" tracks: rural education, autism intervention, eldercare, and barrier-free living. From an industry research perspective, this was not just a conventional tech contest; it was an innovative experiment leveraging AI to solve deep-rooted social problems. The competition successfully empowered nearly 800 development teams with computing power and models, catalyzing nearly 500 AI-native solutions that directly addressed real-world pain points, ultimately culminating in 16 flagship projects. **Participants spanned universities and disability communities. Among the over 50% student participants and 20% independent developers, a 16-year-old "AI-native" prodigy even emerged. All outcomes were fully open sourced within**

22 ¹⁰ Stanford University Human-Centered Artificial Intelligence (HAI). Artificial Intelligence Index Report 2025 [R/OL]. (2025-04)[2026-03-01]. <https://hai.stanford.edu/ai-index/2025-ai-index-report>.

¹¹ EASTWOOD B. AI open models have benefits: so why aren't they more widely used?[EB/OL]. (2026-02-12)[2026-03-01]. <https://mitsloan.mit.edu/ideas-made-to-matter/ai-open-models-have-benefits-so-why-arent-they-more-widely-used>.

the ModelScope community, granting society unrestricted access for replication and secondary iteration. In this tech co-creation movement—which garnered over 100 million online exposures—groundbreaking innovations were born, such as a "post-95s developer utilizing a 100 RMB manufacturing cost to fine-tune AI blind-friendly glasses," and a "fully blind geek reconstructing an edge-side traffic light recognition model." These projects demonstrated an exceptionally high social ROI (Return on Investment). Anchored by the value proposition of "AI for Good, Small Actions, Great Impact," the competition proved to the entire industry that when open source ecosystems serve as comprehensive infrastructure, even the most microscopic, atomized innovation units can leverage technology to catalyze profound, systemic social transformations.[12]

4.1 R&D Logic: Technological Equity and Meeting Niche Needs Amidst Plunging Marginal Costs

With the effective reduction of AI model marginal costs, the highly specialized and precise needs of specific demographics are being met with exceptional quality through deep software-hardware integration. It is crucial to recognize that pursuing a "one-size-fits-all" universal large model often fails to directly address the unique challenges faced by marginalized groups when interacting with the noisy physical world. Take gait navigation for the visually impaired as an example. Generic visual models still struggle to accurately distinguish static obstacles on tactile paving from dynamic, unpredictable traffic flows. This reality

demands that developers conduct targeted, deep fine-tuning to find the optimal Nash equilibrium among model quality, inference performance, and extreme terminal cost constraints.

Case Study: The 100-RMB AI Blind-Friendly Glasses by Xu Fan's OPC

Xu Fan, a post-95s designer and First Prize winner in the accessibility track of the "Xiao You Ke Wei" competition, presented a highly influential innovation model to the industry as a tech geek without a formal Computer Science background. Armed with an industrial design background, basic mechanics, advanced mathematics, and design principles, he seized the historic opportunity of open source AI to develop AI-assisted glasses for the visually impaired.

Initially, his engineering concept was limited to basic obstacle avoidance. However, with the deep assistance and introductions facilitated by ModelScope, his team engaged in highly frequent and intensive brainstorming sessions with the Chairman of the Shanghai Blind Association and active organizers of visually impaired communities. This direct interaction with real terminal needs completely shattered the engineers' product blind spots. They were surprised to learn that the core pain point for the visually impaired wasn't merely singular obstacle avoidance, but the much more frequent and complex need for "pathfinding."

Based on this ultra-precise user insight, Xu Fan's

¹² Everypixel Journal. People are creating an average of 34 million images per day: statistics for 2024[EB/OL]. (2024-08-15)[2026-03-01]. <https://journal.everypixel.com/ai-image-statistics>.

team swiftly leveraged the full-stack toolchains and model resources of the open source community. They discarded asset-heavy, high-power-consumption tech stacks, focusing instead on real-time recognition and semantic understanding capabilities. The system supports critical functions like tactile path tracking, obstacle bypass alerts, traffic light recognition, and crosswalk assistance.

Even more staggering is the economic reality behind it: The project not only fully open sourced its code to GitHub and ModelScope—lowering the barrier for other developers to iterate—but also utilized extremely minimalist supply chain integration to validate hard-core logic with ultra-low-cost hardware components. **This 100-RMB (\$14) level accessible hardware innovation shattered the consumer barrier of traditional medical assistive devices, which routinely cost tens of thousands of RMB.**

The project generated astonishing penetration across media matrices and tech geek circles. **His 4-person studio rapidly amassed 500,000 online followers, with his personal account views exceeding 10 million.** Edited videos of the project were exported overseas, achieving a cumulative global exposure of over 100 million. His story sparked intense feedback within geek communities, while the short-video narrative served as technical enlightenment for the general public. He also received collaboration invitations from top-tier venture capital firms and major tech companies. This asset-light, high-leverage operational logic vividly proves to the global tech community: Empowered by open source ecosystems,

even the smallest individual combat unit can restructure the R&D chain to pry open massive social public value.



Figure: Field test results of AI-assisted glasses for the visually impaired on actual roads

4.2 Subject Transformation: From "Recipients" to "Self-Helpers"—Reshaping Life Narratives via Open Source Toolchains

The greatness of the open source movement lies not only in breaking the technological monopoly at the code level but, more importantly, in executing a historic pivot from "deprivation" to "empowerment." Extremely comprehensive open source toolchains, constantly lowering deployment barriers, and abundant practical tutorials within the community are actively reconstructing the life narratives of disabled groups. They are able to shed the vulnerable label of "passive aid recipients," leap over the natural chasm of physiological limitations, and evolve into product R&D definers who master core productivity. For this special demographic, open source is no longer a self-indulgent game for the geek circle; it is an opportunity to acquire

"self-sustaining, blood-generating" capabilities. AI has truly metamorphosed into digital prosthetics grafted onto their bodily functions and an occupational lever that can alter their destiny.

Case Study: Visually Impaired Developer "Teacher Wu" and His Traffic Light Model

The geek evolution of Teacher Wu, a visually impaired developer, stands as the most hard-core paradigm in this wave of technological equity. Years ago, constrained by declining vision, he was forced into massage therapy—a traditional career path for the blind in China. However, summoned by the power of open source technology, he participated in the "Xiao You Ke Wei" competition, receiving crucial help and developmental advice that facilitated his spectacular transformation into an AI hardware entrepreneur.

As a visually impaired individual himself, he understands more profoundly than any AI product manager what the visually impaired community truly fears, desires, and needs. Through extensive and highly detailed user interviews, he distilled the greatest common denominator of needs across all ages and professions within the blind community: to navigate safely and independently from point A to point B. And on this journey, recognizing traffic lights on pedestrian crossings is undoubtedly the most dangerous trial standing before all visually impaired individuals.

In this vertical and historically neglected track, Teacher Wu demonstrated astonishing geek agility

and cost-control capabilities. He directly adopted the lightweight, high-efficiency YOLO architecture to fine-tune a traffic light state recognition model. **During the data collection phase, he mobilized his team to record nearly 100 videos of actual city streets, rigorously extracting 3,390 images containing valid traffic light features.**

Even more incredible was his utilization of China's unique digital economy advantages: He spent a mere 200 RMB (approx. \$28) to hire gig workers on Taobao to execute precise bounding-box annotations for the entire foundational dataset. **This seemingly trivial 200-RMB transaction formed an ultra-fast closed loop for open source technology.** Continuously nourished by the high-quality technical articles, training tutorials, closed-loop toolchains, and free, accessible computing power provided by top-tier open source communities like ModelScope, he not only successfully trained the model but also began prospectively planning extreme model quantization (such as YOLO-Nano) to achieve millisecond-level real-time edge inference on AR glasses or standard smartphones.

4.3 Paradigm Shift: From "Material Distribution" to "Capability Distribution"—Digital Infrastructure Reconstructing Social Good

When observing these changes through the lens of macroeconomics, we are struck by the realization that the underlying operational paradigm of social philanthropy is undergoing a massive reconstruction.

It is rapidly leaping from the agrarian-era charity of "material distribution" based on sympathy, to a digital infrastructure-driven technical assistance model based on "capability distribution."

Under this entirely new understanding, the essence of an open source community has been elevated to a decentralized, borderless, 24/7 global super-charity organization. Here, a line of open source code written by a brilliant algorithm engineer, an empathetic maker, or even a grassroots disabled geek can be replicated an infinite number of times across the global network at an extremely low, or even zero, cost. This code can then go on to save millions of lives scattered in remote corners, waiting to be reignited.

Case Study: Tech Giants Shifting from "Giving a Fish" to "Teaching to Fish"

China's top tech giants are leveraging their massive investments in foundational large-scale models to penetrate the deep waters of special education and digital assistance. Take Baidu's "Mind-Listening Horizon" (Xinling Shijie) project as an example. It addresses China's over 27 million hearing-impaired individuals trapped in a silent island. For a long time, traditional machine sign language translation devices could only mechanically execute basic word-for-word translations. They failed to comprehend the highly critical facial expressions and subtle emotional rhythms of human communication, resulting in extremely rigid interactions and severe information distortion. To pierce this communication

barrier, Zheng Kaihong's digital team, building upon Baidu's ERNIE-4.5-0.3B large model, pioneered an industry-first semantic completion module.

Driven by the geek spirit, the team not only deciphered the core nature of sign language expression—which is highly abbreviated and extremely reliant on contextualization—but also utilized practical wisdom to construct over 2,200 extremely high-standard "keyword-complete sentence" paired datasets.

When sensors capture and recognize a hearing-impaired individual signing the highly fragmented sequence of "He" "Doctor" "Help" "Me" and simultaneously capture the facial muscle features displaying "Happiness," the deeply fine-tuned large language model can instantly penetrate this discontinuous corpus. Within milliseconds, it automatically reconstructs and outputs fluent text perfectly aligned with natural human speech habits: **"He is a doctor, he helped me, I am very happy."** **This breakthrough qualitative technological leap directly skyrocketed the expression completeness of the hearing-impaired community by 35%, while slashing the semantic ambiguity rate that had long plagued their communication by 70%-80%.** This is no longer a conceptual gimmick confined to a laboratory; it is hard-core technology imbued with genuine physical warmth that pierces real-world needs.

Looking ahead, when the blinking of traffic lights, the extension of tactile paving, and the flow of algorithms completely merge within the open source

ecosystem, we will inevitably usher in a warm era where no minority is abandoned by the system. In that moment, the code woven together will not just be the logical network of the digital world, but an unbreakable baseline of dignity collectively constructed by all humanity. From bridging the "Digital Divide" to grafting "Digital Prosthetics," open source AI does not simply "give a man a fish"—it "teaches him how to fish."

5. Smart Living: Transforming Eldercare, Education, Public Services, and Entertainment Powered by Open Source AI

AI is not just a transmitter of knowledge; it is the ultimate guardian of curiosity. The true value of ModelScope lies in utilizing the power of open source to democratize prohibitively expensive, cutting-edge technology. By drastically lowering the threshold for computing power and R&D costs, it allows developers to craft warm, tailor-made solutions for the most subtle and urgently needed corners of society at minimal expense.

5.1 Illuminating the Dawn: AI Companionship and Embodied AI Reshaping Science Education for AI-Native Generations

The number of newborns in China has now fallen below the 10 million mark, a decline of over 50% from the peak of more than 20 million in the 1990s. However, the family parenting model has universally shifted toward "raising fewer, but finer." This means that while the total number of school-age children is shrinking, the intensity of resources invested by families into a single child is significantly increasing, driving the continuous upgrade of children's education and development toward high-quality and intelligent directions.

In the realm of children's education, AI should not merely be lines of cold code on a screen, but a bridge for deep interaction with the physical world. Traditional AI education often limits itself to virtual interfaces, which can lead to vision impairment and social isolation. Leveraging edge-side model deployment technologies from ModelScope, AI is evolving from a "dialogue box" into "embodied physical entities." By directly driving hardware via

models, AI steps out of the screen and into robots and smart teaching aids, allowing children to perceive the tension of algorithms in physical space. For instance, in the field of programming, the CoCube AI education robot, developed by Liang Shuai's team at Fudan University, is a pioneer of this philosophy.[13] By integrating the Qwen large model via ModelScope, the robot achieved a qualitative leap from rigid command-based programming to intent-driven, natural dialogue.

In terms of child companionship, the value of AI is evolving from mere "knowledge retrieval" to "embodied emotional companionship." Take the emerging Vinplay AI companion toy as an example. By downloading open source large models from ModelScope, it constructed a closed-loop system of "algorithm + chip + cloud." This compressed the core BOM (Bill of Materials) cost of the AI toy to under 40 RMB (approx. \$5.50), while endowing the toy with millisecond-level response speeds and long-term memory capabilities. This "hears well, chats well" software-hardware integrated architecture allows the toy to bid farewell to rigid keyword searches, truly becoming a developmental companion capable of role-playing. These advancements signify that AI in the children's sector is moving toward a new stage of heightened intelligence, personalized character, and universal affordability.

5.2 Guarding the Sunset: Multimodal Proactive Services Meeting Eldercare Needs

As China's demographic structure shifts, the aging population has become a primary focus of government initiatives. According to data from the National Bureau

of Statistics, China's population aged 60 and above reached 280 million in 2023 (accounting for 22% of the total population), officially ushering the country into a moderately aging society. Driven by the "baby boom" generation (1960–1975) and extended life expectancy, this demographic will continue to expand at a compound annual growth rate of 3.8% over the next decade, potentially reaching 410 million (over 30% of the population) by 2034. [14] The demand spectrum of the "silver-haired" generation is manifesting across three cascading tiers: daily living assistance, health safety, and emotional/spiritual fulfillment.

In daily life, the 300 million silver-haired seniors (along with other vulnerable or disabled groups) face not only profound loneliness but also the irreversible decline of vision, hearing, and cognitive abilities. AI large models—through multimodal perception such as visual understanding and voice interaction—act as their new "eyes" and "ears." Traditional hearing aids or walking canes are "passive tools," whereas AI products based on large models offer "proactive perception." They not only identify physical obstacles but also possess spatial semantic understanding capabilities.

In terms of health safety, **the application of AI technologies in health management provides the elderly with more precise and convenient protection.** For example, in the smart health monitoring sector, HearthScribe is an elder-friendly system capable of transforming standard home surveillance cameras into "smart home caregivers." It can proactively understand the behaviors of the elderly and issue real-time warnings for potential risks like falls. Benefiting from the abundant large model

resources and model compression/optimization tools provided by the ModelScope open source community, developers do not need to build complex algorithmic foundations from scratch. They can "slim down" massive, expensive AI brains to perfectly fit onto low-cost home edge devices. This practical application not only slashed monthly operational costs to a mere 26 RMB (\$3.60), but more importantly, allowed advanced eldercare technologies to cross the threshold of accessibility, truly entering millions of households and establishing a new "low-cost, high-response" paradigm for smart elderly care.[15]

5.3 Public Services: Igniting Multi-Stakeholder Participation and Grassroots Co-Creation Through Low-Cost Iteration

Relying on open source, the high ground of cutting-edge AI technical capabilities continually overflows, effectively irrigating public service domains that are easily overlooked or lack commercial validation, while immensely igniting the enthusiasm of diverse entities to participate in co-creation.

In today's era of rapid advancement in AI and frontier technologies, top-tier research power is predominantly concentrated in universities or leading enterprises. According to ModelScope's developer survey, when asked, "As a researcher, what is your core expectation and motivation for joining an open source community?", the highest-ranking response was "Technology transfer and incubation" (51.3%). [16] This clearly indicates that researchers urgently desire to use community platforms to translate

¹⁴ United Nations Department of Economic and Social Affairs. World Population Prospects 2024 [R]. New York: United Nations, 2024.

¹⁵ Digital Leadership Associates. 55% of people are uncomfortable with AI created content[EB/OL]. (2025-10-12)[2026-03-01].

¹⁶ Stanford University Human-Centered Artificial Intelligence (HAI). Artificial Intelligence Index Report 2025 [R/OL]. (2025-04) [2026-03-01].

academic achievements from the ivory tower into applied solutions capable of solving real social problems. Open source precisely builds this bridge, transforming the most advanced algorithmic models and code frameworks into accessible infrastructure. This indiscriminate release of technological dividends has fulfilled numerous livelihood and public service demands that possess immense social value but lack direct financial backing.[17]

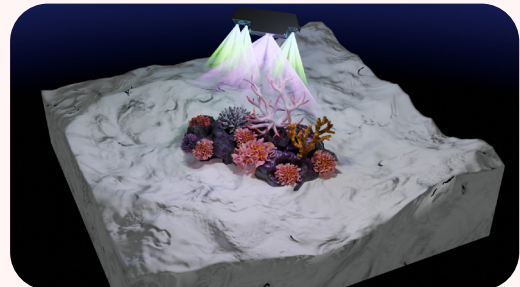
Case Study: Diving into the Deep Sea to Touch Vanishing Colors—Guarding Coral Reefs with AI

Human development and pollution activities have severely damaged marine ecosystems, bringing coral reefs to the brink of extinction due to bleaching. Coral reefs are not only critical habitats for marine life but also hold irreplaceable environmental and economic significance in maintaining biodiversity, protecting coastlines, and supporting fisheries and tourism.

However, coral reef restoration faces numerous formidable challenges: the underwater environment is complex and volatile with dim lighting; manual restoration by human experts is astronomically expensive and highly dangerous; and the unique physical properties of coral reefs—which lie somewhere between soft and brittle—combined with their ecological sensitivity as marine habitats, demand extremely high precision and flexibility during restoration. Such delicate operations far exceed the capabilities of traditional underwater robots.

Young researchers from the Shenzhen Institutes of Advanced Technology (SIAT) connected with

fellow tech enthusiasts on the ModelScope. Together, leveraging open source AI models, they developed a specialized Embodied AI robot system designed for coral reef restoration. Characterized by precise perception, autonomous decision-making, and delicate execution, this system enables Embodied AI to perform "surgical operations" on coral reefs. This innovative system not only overcomes the limitations of traditional robots in complex environments but also effectively enhances restoration efficiency and accuracy. It opens up an entirely new pathway for marine ecological restoration while eliminating the high risks and costs associated with manual labor, contributing a vital technological force to global marine conservation.



5.4 Leisure and Entertainment: The Logical Bedrock of Narrative Universes—From Aesthetic Growth to Generative Script Evolution

In broader entertainment scenarios, the reshaping of individual productivity by AI exhibits a full-chain penetration trend. For instance, the **"Kewei AI Aesthetics"** project, an award-winner in the 2025 Galaxy Super Individual Competition, demonstrated how to construct an aesthetic growth system—spanning from image diagnosis to outfit and hairstyle recommendations—using the ERNIE (Wenxin) large model. By utilizing algorithms to simulate the logic of internationally registered image management professionals, this system helps individual proprietors in the aesthetics industry shorten their service chain by over 60%, resolving the systemic dilemma of "low human efficiency, low transaction rate" that plagues independent operators.[18]

This automation of aesthetic logic empowers ordinary people to wield complex visual aesthetics with expert-level proficiency, allowing them to practice a "new sovereignty" over personal aesthetics in their daily lives. According to the latest industry insights, such tools are driving approximately 87% of independent creators globally to normalize the use of AI in their creative workflows, particularly in stages like narrative framing and 3D asset generation, typically yielding efficiency boosts of over 70%.[19]

Case Study: "GeneraShi" Creating Interactive Novels via AI Generation

Although we still face complex challenges such as content authenticity, copyright disputes, and governance regulations, the trend toward technological equity is irreversible. This collaborative model not only pushes the production efficiency of the individual to its absolute peak, but more importantly, it shatters the barriers of class and resources.

When every ordinary dreamer can weave thousands of universes through a digitized, automated "team," the essence of entertainment will return to humanity's purest creative impulses. Much like the tidal wave that swept art and science five hundred years ago, AI is unlocking a new Renaissance belonging to the common people. When everyone has the power to orchestrate their own inspiration like a film director managing a crew, everyone has the opportunity to become the "Da Vinci" of this era.



¹⁸ Everypixel Journal. People are creating an average of 34 million images per day: statistics for 2024[EB/OL]. (2024-08-15)[2026-03-01].

¹⁹ Ari's Take. New study reveals 87% of producers already use AI tools in their creative process[EB/OL]. (2024-11-20)[2026-03-01].

Appendix: "Global AI Open Source Ecosystem Development" Survey Questionnaire

Part I: User Profile and Segmentation

1.[User Background] What is your current status?

[Single selection]

- A. Students
- B. Large company employees (Over 10,000 employees)
- C. Small and medium-sized company employees
- D. Government and public institution employees
- E. Freelancers/Entrepreneurs
- F. Other (Open-ended)

2.[Job Responsibilities] What are your current learning and work responsibilities? [Single selection]

- A. AI technical professionals (algorithms/development/training/AI infrastructure, etc.)
- B. AI business professionals (product/operations/sales/consulting, etc.)
- C. Non-AI technical professionals (hardware/electrical engineering etc.)
- D. Non-AI business professionals (design/operations/media/finance, etc.)
- E. Other (Open-ended)

Part II: Usage Path and Platform Value

3.[Agent Use] What are the primary use cases for the applications or agents you develop? [Multiple selections]

- A. Social welfare: Primarily used to assist special groups such as the elderly, vulnerable populations, patients with disabilities, pregnant women, minorities, environmental protection initiatives, and inclusive services.
- B. Productivity tool: Primarily used for daily tasks such as data analysis, process management, design, and research.

C. Leisure & Entertainment: Primarily for entertainment and relaxation purposes, such as gaming/animation/creation/companionship, etc.

D. Life services: Primarily used to address practical life issues such as travel, health, consumption, and legal matters.

E. Technical products: Primarily used to enrich the developer ecosystem with development and adaptation toolchains

F. Safety governance: Primarily used to address safety trustworthiness, data compliance, and privacy protection products

G. Other (Open-ended)

4.[Personal Impact] Reflecting on your experience with AI development, what impact do you believe open source communities and AI have had on your career? [Multiple selections]

A. Commercialization: Direct revenue generated through API calls, software projects, and hardware devices

B. Financing collaboration: Has attracted attention from investment institutions or established technical partnerships with upstream and downstream enterprises

C. Job opportunity: Received interview invitations for other positions due to project presentation and promotion

D. Efficiency revolution: Significant improvement in work efficiency without job position change, or expansion of leisure activities

E. No significant dividend: Current investments still exceed returns, with no notable outcomes or benefits achieved.

F. Growing anxiety: Technology updates too rapidly, leaving individuals without benefits and even facing unemployment risks

G. Other (Open-ended)

5.[Continuing Open Source] Would you like to

redistribute your development work based on open source community resources to help more developers? [Single selection]

- A. Very willing: open source is the core driving force for AI development. Sharing achievements earns community recognition and fosters collective technological progress.
- B. Willing under certain conditions: Share experiences or customized versions without involving core trade secrets or competitive advantages
- C. Willing with incentives: The platform may consider open-sourcing if it offers computational power subsidies, certificates of honor, or traffic support.
- D. Not very willing: More inclined to treat the outcomes as personal/company-owned assets or pursue closed-loop commercialization
- E. Other (Open-ended)

Part III: Globalization Evaluation and Improvement

6.[Globalization Perspective] How do you view the roles of open source communities and AI developers in a globalized context? [Multiple selections]

- A. Application exporter: Leveraging engineering expertise and productization capabilities to promote model-based applications/hardware globally
- B. Technical contributor: Actively participate in international open source communities, submit code and datasets, and enhance the technical influence of China
- C. Cultural communicator: Communicating Chinese culture through AI content generation (games, videos, images, applications)
- D. Ecosystem follower: Primarily introduces and localizes advanced technologies to serve the chinese market
- E. Other (Open-ended)

7.[Globalization Issues] What do you think needs the most strengthening for AI applications to enhance their global impact? [Multiple selections]

- A. Open source ecosystem: Develop high-quality, multi-size, and multilingual model and Agent toolchains to reduce entry barriers and costs
- B. Application innovation: Leveraging China's traditional advantages at the application layer to create globally competitive blockbuster products
- C. International cooperation: Establishing a regularized mechanism for international academic exchange and industrial collaboration, and organizing global open source community events
- D. Support system: Establish a service platform and industrial policies covering computing power, compliance, channels, and operations to reduce trial-and-error costs.
- E. Other (Open-ended)

8.[Differentiation Evaluation] Compared to other platforms (e.g., Hugging Face), what are your core reasons for choosing third-party open source communities like ModelScope? [Multiple selections]

- A. Beginner-Friendly: Chinese environment, rich tutorials, good community atmosphere, highly accessible for complete beginners.
- B. Application features: Differentiated services like AI Spaces (Creative Spaces), AI competitions, and offline event operations.
- C. Community activities: Receiving help and value from offline meetups, contests, hackathons, etc.
- D. Network environment: Fast access speed without the need for special network tools.
- E. Accessible compute: Providing free or low-barrier GPU computing support.
- F. Full-stack toolchains: Comprehensive toolchains

spanning from download and training to evaluation, deployment, and inference.

G. Other (Open-ended)

Part IV: Open Source Spirit and Recommendations

9.[Open Source Spirit] Companies like Qwen and DeepSeek have demonstrated strong commitment to open source practices (e.g., sharing model weights and training details). What is the core value of this approach for you? [Multiple selections]

A. Cognitive equity: Beyond open source code alone, I prioritize transparency in technical details (papers/data/approaches) to truly grasp the underlying principles rather than relying on blind implementation.

B. Engineering reproducibility: This open source level allows me to independently reproduce or fine-tune locally, rather than being stuck with a black box.

C. Trust building: Detailed technical disclosure enhances my understanding of the models' safety and capability boundaries, while facilitating the identification and resolution of supervisory issues and vulnerabilities.

D. Innovation acceleration: No need to reinvent the wheel. Practical application innovations and toolchain adaptations can be directly implemented on validated technical pathways.

E. Community collaboration: High-quality open source initiatives will foster collective exploration of challenging issues within the community, promote mutual learning, and generate secondary open source of research outcomes.

F. Other (Open-ended)

10.[Open Discussion] What specific expectations or criticisms do you have regarding the future development of AI open source communities like ModelScope or the global AI ecosystem? [Open-ended question]

