White Paper on AI Startups by Valuation Creation

OxValue.AI

WHITE PAPER ON AI STARTUPS BY VALUE CREATION

OxValue.AI ®

TECHNOLOGY and MANAGEMENT CENTRE for DEVELOPMENT

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PREFACE

OxValue.AI releases 'White Paper on AI Startups by Value Creation,' introducing a novel perspective on global AI startup value creation.

Amid the surging global tech landscape, AI startups have swiftly risen, propelled by their innovative prowess and adaptability. However, accurately gauging their technological value has perennially captured industry focus. Leveraging the globally esteemed valuation model crafted by OxValue.AI, this whitepaper has unveiled the top 30 AI startups worldwide, elucidating distinctions in value-driving factors between domestic and international AI enterprises.

The rankings underscore that despite the dominance of European and American firms, notably those from the United States, in the global AI innovation surge, eight Chinese enterprises have excelled, securing positions in the top 30 global AI startup roster.

Moreover, while global AI startups derive value primarily from their technological ingenuity, Chinese AI startups' value creation is significantly influenced by market factors. Notably, this analysis highlights notable shortcomings in complementary technologies within China, posing a key hurdle to value creation for its AI startups.

This study offers a fresh outlook on the value creation of global AI startups, while shedding light on the opportunities and challenges confronting Chinese enterprises in this domain. Moving forward, OxValue.AI will persist in refining its capabilities to furnish industry leaders with deeper insights, bolstering the sustainable advancement of the AI sector.

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Artificial intelligence ("AI") has emerged as one of the most potentially disruptive and high-growth disciplines amongst the 21st century's wave of technological advancements. It is reshaping the global economic landscape and its industrial ecosystems at an unprecedented pace. With exponential increases in computing power, changes in the availability and utilisation of big data, and systematised improvements to algorithmic frameworks, the discipline has transitioned from theoretical exploration to practical application. Artificial intelligence is profoundly influencing the transformation and upgrading of various industries, from intelligent manufacturing and smart cities, to healthcare and financial services.

AI startups are emerging rapidly on a global scale, exhibiting unique technological innovation capabilities and an ability to exploit differentiated insights to create or transform markets. These startups have both advanced AI technology, and expanded its applications. But the rapid rise of these startups has exacerbated a challenge for investors, financial institutions, policymakers, and entrepreneurs: how to accurately assess their long-run technological value. This challenge is critical and complex. Technology valuation affects a company's ability to secure financing, its ability to invest and grow, and its development trajectory. It also serves as a key metric in the market's recognition of its achievements. Traditional methods of technology valuation are of limited help in the new markets represented here by artificial intelligence, and can fail to accurately reflect potential value of new technologies. New valuation methods are needed to capture the true value of startups in such markets.

This white paper is based on the technology value utility theory pioneered by the OxValue.AI R&D team. We utilise the model derived from this internationally-recognised theory, an AI-driven method that analyses value along five dimensions: technological novelty, technology lifecycle, complementary technologies, market factors, and risks and team. Our paper applies this innovative technology valuation method to assess AI startups in China and globally. We present our findings as a list of the top 30 privately-held pure AI startups worldwide and in China, grouped in terms of their value creation in 2024. We use the method to reveal the differences in the factors driving value creation between Chinese and global AI startup companies.

Our research shows that American and European companies, particularly those from the U.S., lead the global wave of AI innovation, and can be characterised by having highly diversified business scopes. Eight Chinese companies made it into the global Top 30 AI startups. Their particular focus on large model development and autonomous driving indicates that China is becoming an important, though specialised, force in advancing global AI technology.

Over the past decade, some of these AI startups that we recognise as top-tier have been founded in each and every calendar year yet have still grown to achieve that status, indicating the continuous innovation required to keep pace and compete within the rapidly transforming global AI industry. We find a significant clustering effect, with California in the United States and Beijing in China, emerging as two core hubs.

A key finding is that the value creation of AI startups outside China stems principally from their technological innovation, whereas the value creation of Chinese AI startups is more influenced by market scale factors. The study highlights that China faces a notable deficiency in complementary technologies, which has become one of the major bottlenecks in the value creation of its AI startups.

This research provides a fresh perspective on value creation in global AI startups whilst highlighting the opportunities and challenges faced by Chinese companies in this field. OxValue.AI's valuation methodology continues to be optimised, providing deeper insights for industry decision-makers and supporting the sustainable development of the AI sector.

This white paper is divided into four parts. The first part provides a detailed overview of the development of AI startups, including their definition and characteristics, the background of their emergence, current development status, and the main challenges faced by companies during their growth. The second part focuses on technology valuation methods for AI startups, including traditional valuation methods, and introduces the OxValue.AI valuation model. The third part, based on the model, presents the top 30 global, North American & European, and Chinese AI startups in

terms of value creation, and offers an in-depth analysis of these companies. The fourth part summarises the paper and looks ahead to the future trends and prospects for technology valuation in AI startups.

The specific evaluation results presented in this paper are for reference only. We welcome feedback and suggestions from leaders and experts and look forward to further exchanges and discussions to jointly improve the evaluation system for value creation in AI startups.

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Part 1: Overview of AI Startup Development

1.1 Definition and Characteristics of AI Startups

With the explosion of big data, enhanced computing power, and optimisation of algorithm models, artificial intelligence (AI) has ushered in unprecedented development opportunities, leading to the rapid growth of AI startups. Although there is no universally accepted definition of AI startups, they are generally understood as emerging companies operating independently (not under the umbrella of large corporations) in the AI field, which includes areas like machine learning, natural language processing, and computer vision.[1] These companies are typically younger than 10 years and focus on the research, application, and commercialisation of AI technologies, aiming to solve specific problems in various industries.

As pioneers of technological innovation and market transformation, AI startups often possess the following characteristics:

1) High levels of Innovation: AI startups usually have cutting-edge technology and innovative business models. Unrestricted by traditional business processes, they can quickly adapt to market changes and accelerate the commercialization of new technologies.

2) Flexibility and Adaptability: AI startups can rapidly adjust their business strategies and technical roadmaps to respond to changing market environments. This agility provides them with a competitive advantage in the fast-paced AI market.

3) Clear Market Positioning: AI startups often focus on niche markets. By deeply engaging in these specific areas, they can form technological barriers and brand advantages. This specialisation helps them build a strong competitive edge in their fields.

4) High Growth Potential: These companies are typically in a phase of rapid expansion,

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[1] According to Gartner's report released in 2021, AI startups are defined as companies that have been established for no more than 10 years, are independent companies, and have a turnover of less than $100 million (https://www.163.com/dy/article/GM9PMC9M05119734.html)

driven by market demand and technological advancements. Compared to traditional businesses, AI startups experience steeper growth trajectories and can achieve high valuations in a short period.

To better capture the characteristics and trends of AI startups, this white paper defines them as non-listed companies established within the last 10 years and focused on AI-related fields. This definition aims to concentrate on those AI startups that are in their growth phase, with high innovation capabilities and market potential.

1.2 Background of the Emergence of AI Startups

1.2.1 Technology-Driven Growth

AI startups are experiencing unprecedented growth opportunities, largely driven by breakthroughs in key technologies. The advent of deep learning sparked this wave of innovation. Deep learning models based on neural networks have significantly improved the performance of computers in fields such as image and speech recognition, moving AI from theoretical research to large-scale applications. The success of deep learning not only led to more efficient algorithms but also fostered the development of more powerful computing hardware, further accelerating the spread of AI technologies. Natural Language Processing (NLP) advancements, exemplified by models like BERT and GPT, have expanded the scope of AI applications, enabling machines not only to understand the literal meaning of text but also to generate human-like content. These technologies have excelled in areas like text generation, sentiment analysis, and machine translation, leading to the rise of new applications such as intelligent customer service and automated writing. Multimodal technologies, which combine information from multiple modalities (such as vision, language, and audio), have pushed the boundaries of AI applications. For example, in autonomous driving, smart homes, and virtual reality, multimodal technologies allow machines to perceive and understand the world from multiple dimensions, significantly enhancing the applicability of AI systems.

Building on these technological foundations, the rise of large models and generative AI further solidified the innovative position of AI startups. Large models, like the GPT series, demonstrate superior language comprehension and generation capabilities through extensive data training. Generative AI has revolutionised the creative industries by automatically producing text, images, music, and other content, providing businesses with powerful content creation tools.

In summary, the rapid development of AI technologies has provided AI startups with strong technical support, and these startups, in turn, accelerate technological progress through innovative applications, forming a virtuous cycle of technological advancement and industrial growth.

1.2.2 Policy Support

The rise of AI startups has been significantly influenced by strong government policy support. Governments around the world have developed strategic plans and special policies to boost the growth of the AI industry. In China, AI development has been recognised as a national strategy. In 2017, the State Council issued the "New Generation Artificial Intelligence Development Plan," aiming to establish China as a leading global AI innovation centre by 2030. The plan emphasised increasing investment in basic AI research, achieving breakthroughs in core technologies, and promoting the integration of AI with the real economy. In addition, the government has introduced the "Three-Year Action Plan for Promoting the Development of the New Generation of Artificial Intelligence Industry (2018-2020)," which outlined the promotion of applications in key areas such as smart manufacturing, smart cities, and intelligent healthcare. Through dedicated funding and tax incentives, the plan supports startups in their technology research and development as well as market expansion.

The United States has taken active steps in the AI field. In 2021, Congress passed the "National AI Initiative Act," the first U.S. legislation dedicated to AI. This act aims to enhance the U.S.'s global competitiveness in AI by increasing federal funding for AI

research, encouraging cross-sector collaboration, and promoting AI education to cultivate a high-quality AI talent pool.

The European Union, in its 2020 "AI White Paper," outlined its strategic vision for AI, focusing on measures to ensure Europe's leadership in AI technology development and application. Specific initiatives include large-scale investments in AI research and innovation, creating a reliable regulatory framework for AI, and promoting AI applications in industries like manufacturing, agriculture, and healthcare. Additionally, the European Union has launched the "Artificial Intelligence Cooperation Plan," aimed at strengthening AI research collaboration among member states and enhancing Europe's overall AI innovation capacity through the sharing of infrastructure and data resources.

In summary, strategic planning, legal frameworks, financial support, talent development, and industrial policies from governments around the world have created a favourable environment for the growth of AI startups. These policies provide companies with the necessary resources and offer them a strategic advantage in global AI competition.

1.2.3 Capital Support

As AI technologies advance rapidly, the capital market has shown great interest in AI companies. Investors have recognized the commercial potential and societal value of AI, leading to frequent rounds of financing and large-scale investments in this field. According to IDC's 2024 "Worldwide Artificial Intelligence and Generative AI Spending Guide", global IT investments in AI amounted to $132.49 billion in 2022, and are projected to grow to $512.42 billion by 2027, with a compound annual growth rate (CAGR) of 31.1%.[2]

According to data from PitchBook, in 2023, global funding for artificial intelligence

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[2] https://www.idc.com/getdoc.jsp?containerId=prCHC51997124

startups approached $50 billion, representing a year-on-year growth of 9% and surpassing the $45.8 billion raised in 2022, highlighting venture capitalists' confidence in AI as a future growth engine.[3] Crunchbase reports that AI startups received $24 billion in investments in Q2 2024, more than doubling the previous quarter, marking the highest quarterly funding for AI companies in recent years.[4] In the Chinese market, AIGC (Artificial Intelligence Generated Content) financing events totaled 64 in Q1 2024, with disclosed funding amounts reaching 9.73 billion yuan.[5] These numbers reflect investor confidence in AI startups and optimism about market prospects.

1.2.4 Market Demand

With the acceleration of digital transformation and the continuous upgrading of consumer demands, the need for intelligent solutions across various industries has rapidly increased. Companies aim to enhance operational efficiency, optimise customer experience, and create new business models by integrating AI technology. This strong market demand provides AI startups with vast development opportunities, driving their rapid rise. According to data from Fortune Business Insights, the global artificial intelligence market size was valued at $515.31 billion in 2023, and it is expected to grow from $621.19 billion in 2024 to $2,740.46 billion by 2032, with a compound annual growth rate (CAGR) of 20.4% during the forecast period.[6] According to the 2024 V1 edition of IDC's Global Artificial Intelligence and Generative AI Spending Guide, the Generative AI market, as a critical branch of AI, is projected to expand at a CAGR of 85.7%, reaching nearly $150 billion by 2027. By that time, 45% of companies will use this technology for co-developing digital products and services, doubling their revenue compared to competitors.[7] In the Chinese market, according to information released by China Government Net, the core AI industry in China reached a size of 500

[3] https://wallstreetcn.com/articles/3708888

[4] https://finance.sina.com.cn/stock/usstock/c/2024-07-11/doc-inccufst8504297.shtml

[5] https://www.sohu.com/a/783205681_120855974

[6] https://www.fortunebusinessinsights.com/zh/industry-reports/artificial-intelligence-market-100114

[7] https://www.idc.com/getdoc.jsp?containerId=prCHC51997124

billion yuan in 2023,[8] and is expected to double by 2028, reaching 811 billion yuan.[9] These figures not only reflect the widespread application of AI technology in China but also highlight the immense commercial potential and growth space in the Chinese market.

1.3 Current Development Status of AI Startups

According to the Global Digital Economy White Paper (2024) published by the China Academy of Information and Communications Technology (CAICT), by the first quarter of 2024, the number of AI companies worldwide reached nearly 30,000,[10] highlighting a significant growth in the number of AI startups. This figure indicates that AI startups have become a crucial driving force in global technological innovation and industrial upgrading. With continuous technological breakthroughs and expanding market demand, the number of global AI startups is expected to keep increasing.

1.3.1 Regional Distribution

The regional distribution of AI startups shows a certain level of concentration, but it is also becoming increasingly diversified. According to the Global Digital Economy White Paper (2024), the United States is the main hub for AI companies, accounting for a large proportion of global AI companies (34%),[11] thanks to the country's strong technological innovation capabilities and mature business environment. Furthermore, according to Forbes' 2024 AI50 list, 39 of the top AI companies are based in the U.S., with 21 located in San Francisco, California.[12] At the same time, as the world's second-largest economy and a technological powerhouse, China has also seen rapid growth in its AI sector, accounting for 15% of global AI companies,[13] reflecting China's strong momentum in AI development. The country has formed concentrated industrial

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[8] https://www.gov.cn/yaowen/liebiao/202307/content_6890391.htm

[9] https://www.iresearch.com.cn/Detail/report?id=4336&isfree=0

[10] http://szjj.china.com.cn/2024-07/04/content_42850655.html

[11] http://szjj.china.com.cn/2024-07/04/content_42850655.html

[12] https://www.forbes.com/lists/ai50/?sh=f54e3b9290f4

[13] http://szjj.china.com.cn/2024-07/04/content_42850655.html

clusters in major cities like Beijing, Shanghai, and Shenzhen. [14] Additionally, AI companies in countries such as the UK, India, Canada, and Germany are also developing rapidly, contributing to a more diversified global distribution of AI startups.

1.3.2 Industry Distribution

The industry distribution of global AI startups is quite broad, covering several key areas. These companies primarily focus on core underlying AI technologies, healthcare, business intelligence and analytics, advertising, sales and customer relationship management, chatbot technology, image recognition, autonomous driving, cybersecurity, fintech and insurance, robotics, the Internet of Things (IoT) and its industrial applications, text understanding and generation, as well as business applications.

In CB Insights' 2024 AI 100 list, AI companies with different technological focuses are divided into various categories, with AI infrastructure companies accounting for the largest group, followed by companies in the fields of healthcare, business intelligence, and analytics. [15] This report reveals the activity and innovation levels of AI companies across different technical areas. In China, according to the 2024 Report on the Development of China's New Generation of Artificial Intelligence Technology and Industry, the country's AI industry technology system includes 24 technological categories, such as big data and cloud computing, IoT, knowledge graphs, multimodal AI, and embodied intelligence. Technologies like large models, cybersecurity, computational networks, operating systems, AI frameworks, multimodal AI, and embodied intelligence were some of the most active areas in China's AI industry in 2023. In terms of the proportion of technology cooperation, big data and cloud computing ranked first, accounting for 42.70%, followed by IoT at 11.92%.

AI application fields include intelligent enterprise management, smart cities,

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[14] https://finance.sina.com.cn/roll/2024-08-02/doc-incheytk2216689.shtml

[15] https://www.163.com/dy/article/J05G2OUJ055652SI.html

intelligent manufacturing, AI for science, and other specialised areas. Among these, AI for science has become a key emerging track in scientific research. In terms of the density of technology cooperation across application fields, enterprise intelligent management ranked first at 11.83%, followed by smart cities at 11.01%. Next were intelligent manufacturing, intelligent connected vehicles, and smart hardware, accounting for 10.75%, 8.65% and 7.69% respectively.[16]

In summary, AI startups are flourishing in terms of quantity, regional distribution, and industry distribution. With continued technological advancements and growing market demand, AI startups will continue to play a vital role in driving global technological innovation and industrial upgrading.

1.4 Challenges Facing AI Startups

1.4.1 Intense Market Competition

As AI technology becomes more widespread and its application scenarios expand, market competition is becoming increasingly fierce. Not only do startups face tough competition among themselves, but industry giants are also entering the AI field, attempting to seize market share through mergers, acquisitions, and partnerships. This competitive landscape presents numerous challenges for startups in areas such as market expansion and brand building.

1.4.2 Data Privacy and Security Issues

The development of AI technology relies heavily on data, while users' concerns about data security are continuously rising, requiring startups to strengthen their capabilities in data collection, storage, and processing. Additionally, the improvement of data privacy protection regulations has increased compliance costs for startups.

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[16] https://cingai.nankai.edu.cn/2024/0621/c9374a546068/page.htm

1.4.3 Complexity in Evaluating Technological Value

1) Difficulty in selecting valuation criteria

For AI startups, choosing appropriate valuation criteria is challenging. Traditional financial metrics, such as revenue and profit, may not fully reflect the technological potential and future business value. Investors need to consider multiple factors, such as technological innovation, market potential, and team strength, which increases the difficulty and subjectivity of valuation.

2) Time-consuming and inefficient manual collection of information

When assessing technological value, gathering and organising relevant information manually is often time-consuming and inefficient. Since a large amount of information about technology, market, and team is required, the entire process can consume significant resources.

3) Valuation results are highly influenced by the expertise and diligence of due diligence personnel

The evaluation results largely depend on the expertise and diligence of the due diligence personnel. Different levels of technical understanding and subjective judgments among personnel may directly impact the final valuation outcome, adding subjectivity and uncertainty to the process.

4) High costs

Technology value assessment often requires a significant amount of time, human resources, and material resources, making it costly. For startups, such high costs can be a substantial burden.

In summary, the unique characteristics and challenges faced by AI startups make evaluating their technological value complex. When choosing valuation methods, multiple dimensions need to be considered to comprehensively assess their actual value.

Part 2: Technology Valuation Methods for AI Startups

With the rapid development of artificial intelligence, the uniqueness and advancement of technology directly impact the market competitiveness and long-term development potential of startups. Technology valuation is an important means of assessing the value of innovative companies, technological projects, or intangible assets. It affects the quality of investors' decisions and directly influences the company's ability to raise funds, market positioning, and long-term development strategy. Therefore, selecting an appropriate technology valuation method can provide scientific grounds and references for AI startup valuations, offering forward-looking judgments on the company's future innovation capabilities and market potential.

2.1 Traditional Valuation Methods

Previous research has explored various practical methods for technology valuation, including quantitative methods, such as the cost method (Mard, 2000), income method (Thorn et al., 2011), real options analysis (e.g., Eichner, Germuenden, and Kautzsch, 2007; Oriani and Sobrero, 2008), and structural models (Park and Park, 2004); qualitative methods, such as fuzzy multi-criteria comparison (Cheng, 2013), specific value point methods (Vega-González et al., 2010), and peer benchmarking (Baek et al., 2007; Hsu et al., 2021); and hybrid methods (Doerr, Gates, and Mutty, 2006).

However, these methods present certain shortcomings and limitations when applied to the technology valuation of startups. For example, the cost model estimates the economic value of technology based on current costs, but costs do not necessarily equal future returns, especially for technology that requires significant human creativity. Revenue-based methods, real options methods, and hybrid methods rely on predictions of future income, which inherently involve uncertainty. For startups with fluctuating revenue that are still in the research and development stage and have

not yet generated actual income, the income method may not be applicable. The benchmarking method assumes that potential buyers in the market would reasonably pay similar prices to purchase comparable technologies (Reilly and Schweihs, 1999). However, finding comparable technologies and their transaction prices is often challenging, as startup technology and business models are unique, making it difficult to find suitable comparable companies in the market or sufficient transaction data and public information. In such cases, the accuracy of the valuation may be affected. Given the high growth and innovation of AI startups, valuing their technology is a complex process involving multiple dimensions, and traditional valuation methods may not be suitable for startups, particularly for startup teams. Therefore, new valuation methods are needed to accurately capture the value of AI startups.

2.2 OxValue Valuation Model

2.2.1 Introduction to the OxValue Valuation Model

The OxValue valuation model is a leader in the AI-driven technology valuation field, based on nearly ten years of research by a related technology development team at the University of Oxford. The model is designed around a breakthrough theory of technological value utility, focusing on factors such as technological novelty, the technology lifecycle, market size, the existence of complementary technologies, team strength, and potential risks to determine value. Specifically, the OxValue valuation model is based on the "Very Early-Stage Technology Valuation Method" (VEST) tool, a unique and innovative approach that uses big data, econometric models, and machine learning to perform empirical estimation and model validation, providing a monetary value estimate for patents or startups through in-depth analysis.

OxValue's model consists of a proprietary theory of valuation which is combined with large-scale AI-driven, industry-specific databases which are intelligently optimised and updated to deliver dynamic valuation algorithms. Supported by sector-specific parameterisation, and market structure and trend insights, this AI empowered model enables new ways of collecting data, deriving and representing graphical valuations,

industry forecasts and risks, comparing competitors, and selecting and recommending investment institutions. The valuation process becomes both more rigorous and more accessible with more complete results accompanied by a narrative breaking down the factors contributing to the valuation. The results are designed to enable meaningful discussions between inventors and potential investors.

As a disruptor in the global technology valuation field, OxValue's valuation technology has received high recognition from international organisations such as the World Intellectual Property Organisation (WIPO) and Innovate UK, and it has been highly recommended by the United Nations Technology Innovation Platform. Additionally, its core theory has won the 2017 European Academy of Management Best Paper Award, the 2021 Falling Walls Science Breakthrough Award, and the 2024 Alibaba Cloud Global Summit Best AI Project Implementation Award. The OxValue valuation model provides a precise, efficient, objective, and cost-effective valuation engine across multiple industries, empowering startups, financial institutions, investors, research institutions, government agencies, and other entities, offering key reference indicators for technology investment, transfer, and commercialisation decisions. This accelerates the generation and scaling of new productive capacities and contributes to sustained and stable economic development.

2.2.2 OxValue Valuation Model Technical Path

OxValue's valuation model comprises a theoretical framework supported by two types of databases, three AI drivers, and comprehensive data compliance (see Figure 1).

1) Theoretical Framework

OxValue's technology valuation is based on the original technology value utility theory created by the OxValue.AI R&D team (Fu, et al., 2017; Fu, et al., 2024). This theory proposes that the value of a technology is determined by its functional utility in meeting market demands. The value depends on what market needs the technology satisfies, to what extent it satisfies those needs (determined by the novelty of the technology), whether the technological and institutional conditions required to fully

realise its value are met, where the technology is in its lifecycle (emerging, growing, mature, declining), and the risk involved in realising its value (team capability). In short, the theory integrates five major factors—technological novelty, market factors, technology lifecycle, risks and team, and complementary technologies—using the market utility of the technology as the standard parameter for assessment. This provides a revolutionary, precise, objective, universal, and economical method for valuing patents and startups.

2) Two Types of Databases

The OxValue system is supported by the establishment of two proprietary databases, which underpin large industry-specific databases for each sector:

i. Industry-specific database

This exclusive industry-specific database is used to store and analyse data during the valuation process. The database is categorised by industry and grows continuously with increasing valuation cases, becoming more accurate and refined over time.

ii. GPT-powered big data infrastructure

The GPT-powered big data infrastructure supports multiple macro and market analysis aspects in valuation reports. Additionally, this database is crucial for generating floating curves and trend forecasts for dynamic adjustments in technology valuations over time. To date, OxValue's valuation system and database have been tested and calculated using 150 million patents, 340,000 startups, 58 million innovation teams, and a wide range of industry data.

3) Three AI Drivers

The OxValue valuation system uses AI to automate and process data in three key areas:

i. In the training phase of the industry valuation algorithm model, machine learning and deep learning techniques are used to train the generation of valuation models, particularly for time-based patent value fluctuations. AI analyses industry trend data and technical development information to dynamically adjust the valuation of patents

at different points in time.

ii. In the data collection phase of the valuation process, AI large language models and multimodal data processing mechanisms are employed to enhance data collection efficiency. AI-powered chatbots interact with users, answering their questions about the valuation questionnaire and guiding them in submitting the correct answers. Users can submit various types of data, including documents, images, videos, and audio related to the evaluation subject, which AI automatically organises and uses to answer the preset questions, making the data collection process more efficient.

iii. During the generation and publication phase of the technology valuation report, AI assists in efficiently producing the report text and corresponding data charts. The report includes not only a summary analysis and review of the valuation subject but also an analysis of industry development trends, opportunities and risks, competitor analysis, and even matching recommendations for investment institutions.

4) Comprehensive Data Compliance

The OxValue valuation system strictly adheres to comprehensive data compliance requirements. For example, considering compliance factors such as cross-border data transfer, all data and algorithms related to OxValue in China will be stored within the country, utilising local cloud service providers (such as Alibaba Cloud, Tencent Cloud, etc.) for storage and deployment.

Figure 1. OxValue Valuation Framework

2.2.3 Effectiveness of the OxValue Valuation Model

The OxValue valuation model has demonstrated a high predictive capability that surpasses most existing valuation methods. For instance, researchers tested the OxValue valuation model on 370 UK biopharmaceutical and medical technology companies, achieving a predictive capability of over 92%. Additionally, the company has completed nearly a hundred practical tests and localised developments in the Chinese market, with an accuracy rate of 100% for valuing startups aged five years and younger; when including startups older than five years, the accuracy rate is 86%.

The characteristics of the OxValue valuation method also include:

1) High Level of Accuracy: The OxValue intelligent valuation engine achieves over 90% accuracy across multiple industries. The accuracy rates for valuation methods developed in digital technology, biomedicine, and medical devices are 86%, 91%, and 92%, respectively, whereas the industry average is only 21%.

2) High Speed: The valuation process is quick. With complete data, valuation results can be obtained within five minutes using fully automated deep learning algorithms and valuation report generation (GPT APIs).

3) Cost-Effective: The valuation cost is significantly reduced. Based on vertical large models and big data training algorithms, the intelligent generation of results costs less than one-tenth of traditional due diligence methods.

4) Data Security: The assessment data is sourced from non-sensitive and objective data, preventing privacy issues.

5) Wide Applicability: The platform's valuation services cover eight popular industries, making it particularly suitable for startups and innovative teams lacking financial data or comparable cases.

By providing startups and investors with the necessary tools to accurately assess technical value, the OxValue valuation model offers numerous benefits. Increased valuation transparency allows financial markets to operate more efficiently, enabling better capital allocation and improving M&A decisions for all parties involved. This tool also benefits governments, enabling better assessment, evaluation, and

acquisition of technology, and guiding intellectual property management decisions in areas such as technology transfer and public funding allocation.

Part 3: Ranking of AI Startups by Value Creation

Analysing and ranking the value creation of AI startups in China and globally is an important means to gain insights into the development trends of the AI industry and to assess a company's innovation capacity and market potential. By comparing the technological advantages and market performance of AI startups from different regions, we can reveal technological gaps, development trends, and potential opportunities, thereby providing data support for funding flows and strategic decisions. The global ranking of AI startups in value creation provides an insight into international competitiveness. Ranking the value creation of global AI startups provides a direct representation of each country's research and development strength, innovation capability, and market influence in the AI field, offering robust support for enhancing national competitiveness. This white paper, based on the OxValue valuation model, has released a list of the top 30 global, North American & European, and Chinese AI startups in terms of value creation, revealing the differences in value drivers between Chinese and foreign AI companies, providing new insights into the value creation of global AI startups.

3.1 Analysis of Top Global AI Startups by Value Creation

To comprehensively reflect the overall strength and regional distribution of global AI startups, the white paper publishes the list of the top 30 global AI startups in 2024 by value creation (Table 1, hereinafter referred to as "Global AI Top 30"). This comprehensive list not only includes the leaders in the North American & European AI field but also fully showcases the strength of Chinese AI startups, providing valuable insights and references for the future development of the global AI industry ecosystem.

3.1.1 Valuation Levels

Table 1 shows that the Top 10 global AI companies are primarily from the United States and Europe, where they hold significant advantages in core AI technologies such as large models, natural language processing, and advanced hardware design. For instance, OpenAI's GPT model and breakthroughs from companies like Anthropic in the field of large language models have positioned them ahead of the global market. Despite the rapid development of Chinese AI companies, with 8 Chinese firms ranked among the global leaders—6 in the Top 11-20 and 2 in the Top 21-30—these companies tend to be more market demand-oriented, focusing on practical applications such as autonomous driving and robotics, which still leaves a gap compared to the global leaders.

Table 1. Top 30 Global AI Startups by Value Creation

Unit: Billion USD

Company Name	Year Established	Headquarters	Industry
Top 1-10			
Company Name	Year Established	Headquarters	Industry
Anduril Industries	2017	California, USA	Defence Software and Hardware
Anthropic	2020	California, USA	AI Large Model Development
Cerebras Systems	2016	California, USA	Computer Chip Manufacturing
Cohere	2019	Ontario, Canada	AI Large Model Development
DeepL	2017	Cologne, Germany	Language Translation Services
Glean	2019	California, USA	Search Engine
Hugging Face	2016	New York, USA	AI Large Model Development
OpenAI	2015	California, USA	AI Large Model Development
Scale AI	2016	California, USA	Data Labelling and Software
xAI	2023	California, USA	AI Large Model Development
Average:25.950			
Top 11-20			
Company Name	Year Established	Headquarters	Industry
Adept	2022	California, USA	AI Large Model Development
Anyscale	2019	California, USA	AI Application Deployment Software
Figure AI	2022	California, USA	Intelligent Robot Manufacturing
Harbin Institute of Technology Robot	2014	Heilongjiang, China	Intelligent Robot Manufacturing
Mistral AI	2023	Paris, France	AI Large Model Development
Momenta	2016	Beijing, China	Autonomous Driving
WeRide	2017	Guangdong, China	Autonomous Driving
Pony.ai	2016	Beijing, China	Autonomous Driving
Moonshot.AI	2023	Beijing, China	AI Large Model Development
Beijing Knowledge Atlas Technology	2019	Beijing, China	AI Large Model Development
Average:4.880			

Top 21-30			
Company Name	Year Established	Headquarters	Industry
Abridge	2018	Pennsylvania, USA	Medical Documentation
Baichuan AI	2023	Beijing, China	AI Large Model Development
Harvey	2022	California, USA	Law Firm AI Models
Insitro	2018	California, USA	Drug Discovery and Development
MiniMax	2021	Shanghai, China	AI Large Model Development
Perplexity	2022	California, USA	Search Engine
Pinecone	2019	New York, USA	Database Software
Synthesia	2017	London, UK	Generative AI
Waabi	2021	Ontario, Canada	Autonomous Driving
Writer	2020	California, USA	Generative AI
Average:3.052			

Note: The rankings are not in any particular order.

3.1.2 Regional Distribution

The global distribution of the top 30 AI companies exhibits a dual-centre pattern centred on California in the United States and Beijing in China (Figure 2). The United States holds the top position with an absolute advantage of 17 companies. Meanwhile, China, as a rising star in the AI field, follows closely with 8 companies on the list, demonstrating the rapid momentum of China in AI technology research and application. Additionally, European countries like Germany, France, and the United Kingdom each have one company on the list, contributing to the diversified development of the global AI industry.

Among the global top 10 AI companies, those from California dominate, reflecting the region's leadership in the global AI field. European companies also made the list, showcasing their competitiveness in the AI domain. Although Chinese companies are fewer in number compared to the U.S., they perform exceptionally well in the Top 11-20 and Top 21-30 categories, highlighting China's rapid progress in AI technology research and application.

Figure 2. Top 30 Global AI Startups by Value Creation (Regional Distribution)

3.1.3 Industry Distribution

As a core technology area, large AI models are the primary focus of the global top 30 AI companies, with as many as 11 companies leading the list. This fully demonstrates the widespread research interest and practical applications of this field on a global scale (Figure 3). Notably, Chinese companies occupy four positions in the large AI model development sector within the global top 30 list, with two in the top 11-20 and two in the top 21-30. This highlights not only China's international competitiveness in AI core technology research and application but also the strong momentum of Chinese AI companies in terms of technological innovation and market potential. The inclusion of these companies is a testament to the rapid development of China's AI industry and the supportive policy environment, and it also reflects China's growing influence in the global AI field, positioning the country as a key driver of AI technology advancement and application worldwide.

Additionally, China's entry has brought notable changes to the list, particularly in the autonomous driving sector. This area, closely following large AI models, has become the second-largest concentration of global AI companies. China has three companies on the list in the autonomous driving sector, all of which are ranked in the top 11-20. This not only reflects China's rapid development in this field but also highlights the

combined effects of market demand and policy support. The Chinese government's emphasis on intelligent transportation and new infrastructure, through policies such as establishing autonomous driving pilot cities and promoting the development of 5G and vehicle-to-everything (V2X) technologies, has provided strong support for breakthroughs by Chinese AI companies in the autonomous driving sector.
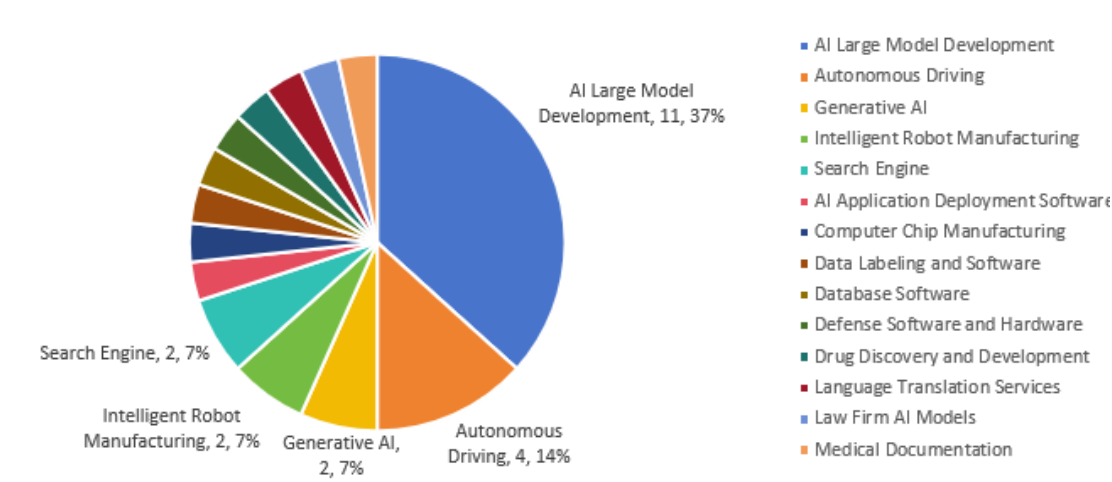

Figure 3. Top 30 Global AI Startups by Value Creation (Industry Distribution)

3.1.4 Year of Establishment

An analysis of the founding times of the global top 30 AI companies shows distinct patterns across different tiers of companies. The top 1-10 have a wide range of founding years, indicating a competitive landscape where both established and emerging companies coexist. The companies in the top 11-20 and top 21-30 were mostly founded after 2018, reflecting the rapid development of the AI industry in recent years and the high level of attention AI technologies have garnered in the market. The growth trajectories and founding times of these companies suggest that the vitality and competitiveness of the AI industry stem not only from long-term research and accumulation but also from the influence of emerging technologies and market dynamics.

3.2 Analysis of Top North American & European AI Startups by Value Creation

Against the backdrop of significant global attention on the artificial intelligence market, this white paper also presents the 2024 global rankings of the top 30 AI startups in regions outside of China (Table 2, referred to as "North American & European AI Top 30"). It provides an in-depth analysis of the AI innovation landscape in the regions outside of China, offering a unique perspective for understanding the international AI competitive landscape.

3.2.1 Valuation Levels

The average valuation of the North American & European AI Top 30 companies is $10.707 billion. The valuations show a right-skewed distribution, with a few companies possessing unique competitive advantages having valuations significantly higher than the average.

Analysis of the valuation ranking ranges indicates that the top 10 companies exhibit the greatest variance in valuation ranges. It suggests that in the AI industry, leading firms have a pronounced competitive advantage, excelling in aspects such as technological accumulation, team expertise, market resources, and brand influence. This attraction has led to increased capital interest and investment, resulting in higher valuations. Additionally, it reflects a substantial Matthew effect within the industry.

Table 2. Top 30 North American & European AI Startups by Value Creation

Unit: Billion USD

Top 1-10			
Company Name	**Year Established**	**Headquarters**	**Industry**
Anduril Industries	2017	California, USA	Defence Software and Hardware
Anthropic	2020	California, USA	AI Large Model Development
Cerebras Systems	2016	California, USA	Computer Chip Manufacturing
Cohere	2019	Ontario, Canada	AI Large Model Development
DeepL	2017	Cologne, Germany	Language Translation Services
Glean	2019	California, USA	Search Engine
Hugging Face	2016	New York, USA	AI Large Model Development
OpenAI	2015	California, USA	AI Large Model Development
Scale AI	2016	California, USA	Data Labelling and Software
xAI	2023	California, USA	AI Large Model Development
Average:25.950			

Top 11-20			
Company Name	Year Established	Headquarters	Industry
Abridge	2018	Pennsylvania, USA	Medical Documentation
Adept	2022	California, USA	AI Large Model Development
Anyscale	2019	California, USA	AI Application Deployment Software
Figure AI	2022	California, USA	Intelligent Robot Manufacturing
Harvey	2022	California, USA	Law Firm AI Models
Insitro	2018	California, USA	Drug Discovery and Development
Mistral AI	2023	Paris, France	AI Large Model Development
Perplexity	2022	California, USA	Search Engine
Pinecone	2019	New York, USA	Database Software
Waabi	2021	Ontario, Canada	Autonomous Driving
Average:3.923			
Top 21-30			
Company Name	Year Established	Headquarters	Industry
AssemblyAI	2017	California, USA	Speech Transcription Tools Provider
Cresta	2017	California, USA	Call Centre Agent Assistance
ElevenLabs	2022	London, UK	Generative AI
Hebbia	2020	New York, USA	Search Engine
Owkin	2016	New York, USA	Drug Discovery and Development
Pika	2023	California, USA	Generative AI
Synthesia	2017	London, UK	Generative AI
Together AI	2022	California, USA	AI Large Model Development
Tractian	2019	Georgia, USA	Industrial Machinery Maintenance
Writer	2020	California, USA	Generative AI
Average:2.249			

Note: The rankings are not in any particular order.

3.2.2 Regional Distribution

The regional distribution of the North American & European AI Top 30 companies exhibits a significant concentration (Figure 4), with the United States dominating with 24 companies. Notably, California stands out as the technology innovation centre of the U.S. and even the world, housing 18 of the top 30 AI companies, which showcases its profound foundation and innovative capabilities in the field of artificial intelligence. Europe also demonstrates some competitiveness, with two companies from the UK and one each from Germany and France making the list.
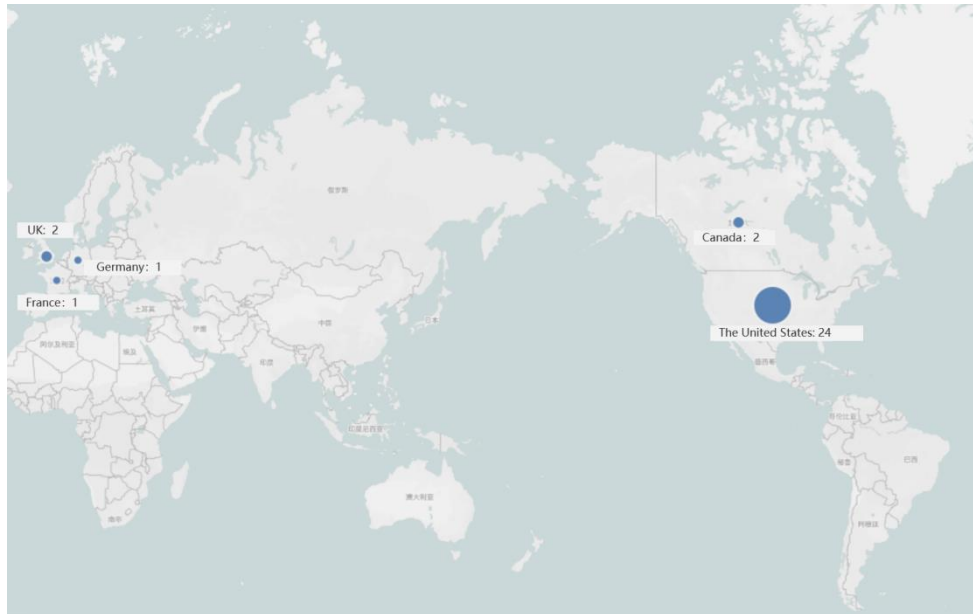
Figure 4. Top 30 North American & European AI Startups by Value Creation (Regional Distribution)

Further analysis of the geographic distribution among different tiers of companies reveals that in the Top 1-10, the dominance of the U.S., particularly California, is especially pronounced, with 8 companies located there, 7 of which are in California. This distribution emphasises the leadership position of the U.S. in the global AI sector.

In the Top 11-20 and Top 21-30 companies, while the U.S. still maintains the majority share, there is also the emergence of companies from the UK and Canada, indicating that the forces of AI innovation are beginning to spread to other regions globally. This trend shows that the development and application of AI technology are expanding worldwide, with enterprises from different countries and regions actively participating in this field's competition and cooperation.

3.2.3 Industry Distribution

The industry distribution of the North American & European AI Top 30 companies showcases a high degree of diversity and innovation, encompassing not only the core area of artificial intelligence large model development but also extensively covering cutting-edge technologies and industry applications such as generative AI, search

engines, and drug discovery and development (Figure 5). The rise of generative AI is particularly noteworthy, with 4 companies on the list, highlighting the rapid development and widespread application of this field globally.

It is important to note that while the performance of North American & European companies in the medical AI sector may not be as prominent as that of their Chinese counterparts, they still demonstrate impressive results in subfields like drug discovery and development, reflecting a trend toward specialisation in medical AI. Additionally, the North American & European AI Top 30 includes a range of unique and specialised industry applications, such as defence software and hardware, industrial machine maintenance, and call centre agent assistance, showcasing the deep integration and customised services of North American & European AI technologies across different industries.

Among the Top 1-10 companies, artificial intelligence large model development has become a significant trend, with half of the companies focusing on this area, indicating the capital market's high regard and expectations for this field. The North American & European top 1-10 companies are consistent with the global top 1-10 companies, indicating that these leading North American & European companies hold a dominant position in the global AI industry, with their innovation capabilities, market influence, and valuation at the forefront of the sector. In the Top 11-20 companies, industry distribution begins to diversify, including areas like medical dialogue documentation, AI application deployment software, and intelligent robot manufacturing, reflecting the capital market's recognition of the potential of AI technologies in various application scenarios.

As for the Top 21-30 companies, their industry distribution is even broader, covering areas such as voice transcription tool provision, call centre agent assistance, and generative AI. This further confirms that AI technology is increasingly being applied across various industries, driving innovation and transformation in multiple sectors.
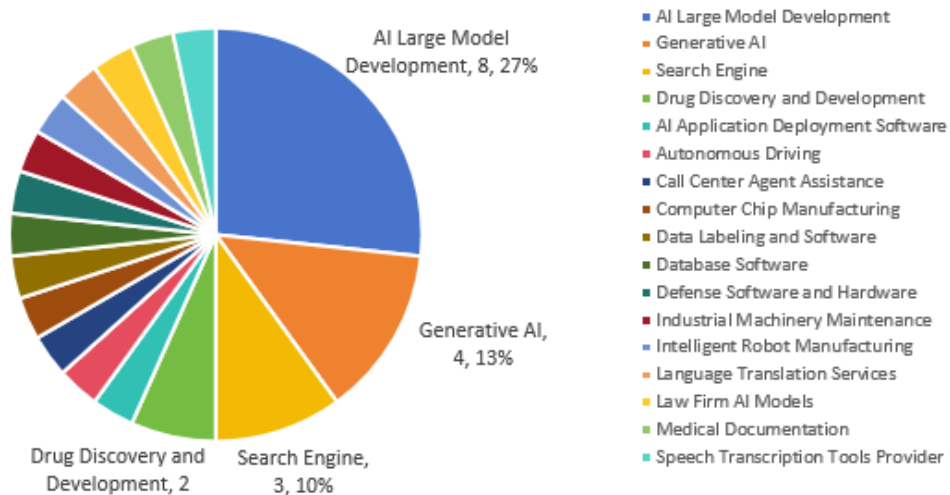
Figure 5. Top 30 North American & European AI Startups by Value Creation (Industry Distribution)

3.2.4 Year of Establishment

When examining the distribution of establishment years among the North American & European AI Top 30 companies, it is evident that these companies span a wide range of founding years. In the Top 1-10 companies, the founding years extend from 2015 to 2023, highlighting that companies established during different periods have had the opportunity to achieve high valuations through technological innovation and market insights. This indicates that the vitality of the AI industry globally is not constrained by the establishment time of companies.

For the Top 11-20 and Top 21-30 companies, the founding years are more concentrated, with most established after 2018. This phenomenon may be closely related to the rapid development of AI technologies and the growth of market demand, similar to emerging enterprises in China's AI field, which tend to quickly stand out in specific fields or application scenarios of AI technology.

Thus, a significant trend is that, whether North American & European or in China, many high-valued AI companies include those established in recent years. These companies have rapidly secured a place in the market due to breakthroughs in specific AI technologies or applications. This global trend reflects a common characteristic of

the AI industry: technological innovation and market demand are the key factors driving company growth and valuation, rather than merely the age of the company.

3.3 Analysis of Top Chinese AI Startups by Value Creation

Based on the OxValue valuation model, this white paper publishes the list of the top 30 Chinese AI startups in 2024 by value creation (Table 3, hereinafter referred to as "China AI Top 30").

3.3.1 Valuation Levels

Overall, the average valuation of the China AI Top 30 companies is $2.051 billion. In contrast, the average valuation of the North American & European AI Top 30 companies is $10.707 billion, which is five times of the average valuation of Chinese AI companies. This reflects a significant gap between Chinese AI companies and their international counterparts in terms of overall scale and capital valuation.

The analysis of valuation rankings by different intervals shows significant differences in valuation levels among the various ranking intervals. The top 10 companies show the greatest valuation disparity, which is evident in both North American & European and Chinese AI companies, reflecting intense market competition and disparities in strength among companies at different levels. Furthermore, the average valuation of the top 1-10 companies is much higher than the other two tiers, indicating their leading market position and high recognition from investors. In contrast, the average valuations for the top 11-20 and top 21-30 companies are relatively lower, which may be related to the novelty of their technology, market influence, and growth potential.

Table 3. Top 30 Chinese AI Startups by Value Creation

Unit: Billion USD

Top 1-10			
Company Name	**Year Established**	**Headquarters**	**Industry**
Baichuan AI	2023	Haidian District, Beijing	AI Large Model Development
Cloudminds	2015	Minhang District, Shanghai	Intelligent Robot Manufacturing
Harbin Institute of Technology Robot	2014	Harbin, Heilongjiang	Intelligent Robot Manufacturing
MiniMax	2021	Xuhui District, Shanghai	AI Large Model Development
Momenta	2016	Haidian District, Beijing	Autonomous Driving
WeRide	2017	Guangzhou, Guangdong	Autonomous Driving
Pony.ai	2016	Haidian District, Beijing	Autonomous Driving
SemiDrive	2018	Beijing Economic-Technological Development Area	Automotive Chip Design and Services
Moonshot AI	2023	Haidian District, Beijing	AI Large Model Development
Beijing Knowledge Atlas Technology	2019	Haidian District, Beijing	AI Large Model Development
Average:3. 955			
Top 11-20			
Company Name	**Year Established**	**Headquarters**	**Industry**
DataGrand	2015	Shanghai Free Trade Zone	Intelligent Knowledge Management and Text Processing
Deepexi	2018	Haidian District, Beijing	Data Intelligent Services
Flexiv	2016	Minhang District, Shanghai	Intelligent Robot Manufacturing
01.AI	2023	Haidian District, Beijing	AI Large Model Development
DP Tech	2018	Haidian District, Beijing	AI Applications in Science
SmartMore	2019	Shenzhen, Guangdong	Intelligent Manufacturing
InferVision	2016	Haidian District, Beijing	Medical AI
Micro-i Intelligent	2018	Changzhou, Jiangsu	Intelligent Robot Manufacturing
Insilico Medicine	2019	Shanghai Free Trade Zone	Medical AI
Beijing Zhongke Wenge Technology	2017	Haidian District, Beijing	Intelligent Decision Services
Average:1.470			
Top 21-30			
Company Name	**Year Established**	**Headquarters**	**Industry**
Axera Tech	2019	Ningbo, Zhejiang	AI Chip Design and Services
IceKredit	2015	Shanghai Free Trade Zone	Enterprise-level AI Services
Proxima AI	2017	Jiading District, Shanghai	Medical AI
LinkDoc Technology	2014	Haidian District, Beijing	Medical AI
Luchen Tech	2021	Haidian District, Beijing	AI Large Model Development
Mech-Mind Robotics	2016	Haidian District, Beijing	Intelligent Robot Manufacturing
Shan Shu Technology	2016	Chaoyang District, Beijing	Intelligent Decision Services
Shu Kun Technology	2017	Changping District, Beijing	Medical AI
Unitree Robotics	2016	Hangzhou, Zhejiang	Intelligent Robot Manufacturing
Yunqu Info	2017	Guangzhou, Guangdong	Communication Technology Product R&D and Services
Average:0.727			

Note: Rankings are not in any particular order.

3.3.2 Regional Distribution

The regional distribution of China AI top 30 shows a significant clustering effect (Figure 6), primarily concentrated in economically developed regions rich in technological resources. Beijing leads with 16 companies, demonstrating its strong attraction and development capabilities in the AI field. Shanghai follows closely, showcasing its technological innovation capacity as an international metropolis. Other economically strong coastal provinces such as Guangdong, Zhejiang, and Jiangsu are also represented, but in fewer numbers. Overall, there is a clear regional concentration trend among AI companies, reflecting the close relationship between technological development and regional economy and policy environment.

Notably, Haidian District in Beijing accounts for 50% of the top 1-10 companies, further solidifying its status as a hub for technological innovation in China and highlighting Beijing's leadership in the AI field. This is similar to the dominance of California in the North American & European AI Top 30, as both cities are hotspots for AI innovation and business growth in their respective countries. Shanghai also has two companies in the top ten, reflecting its rich foundation in technological innovation and active exploration in the AI sector. In the top 11-20 and top 21-30 companies, Shanghai and Beijing's Haidian District continue to maintain their geographical advantages, while the geographic distribution begins to expand to broader regions, including economically developed areas like Jiangsu, Zhejiang, and Guangdong. This trend indicates that the geographical distribution of AI companies is spreading to more economically developed regions, suggesting that the application and industrialisation of AI technology are accelerating nationwide, and reflecting the increasingly active competition and cooperation in the AI field across various regions in China.

Figure 6. Top 30 Chinese AI Startups by Value Creation (Regional Distribution)

3.3.3 Industry Distribution

The industries of the China AI Top 30 companies are mainly concentrated in areas such as AI large model development, intelligent robot manufacturing, medical AI and autonomous driving, reflecting China's strategic priorities and development direction in the AI sector (Figure 7).

In the top 1-10 companies, firms in the fields of AI large model development and autonomous driving dominate, suggesting that companies in these sectors are favoured in the capital market, making it easier for them to achieve higher valuations. In the top 11-20 companies, the industry distribution begins to show diversification; in addition to continuing to include companies focused on AI large model development and autonomous driving, new companies have emerged that focus on intelligent knowledge management, text processing, and data intelligent services.

Amongst companies ranked 21-30, industry diversity further increases, expanding into areas including chip design and services, enterprise AI services, and communication technology, which not only demonstrate the wide applicability of AI technology but also reflect the deep penetration and integration of AI technology in different
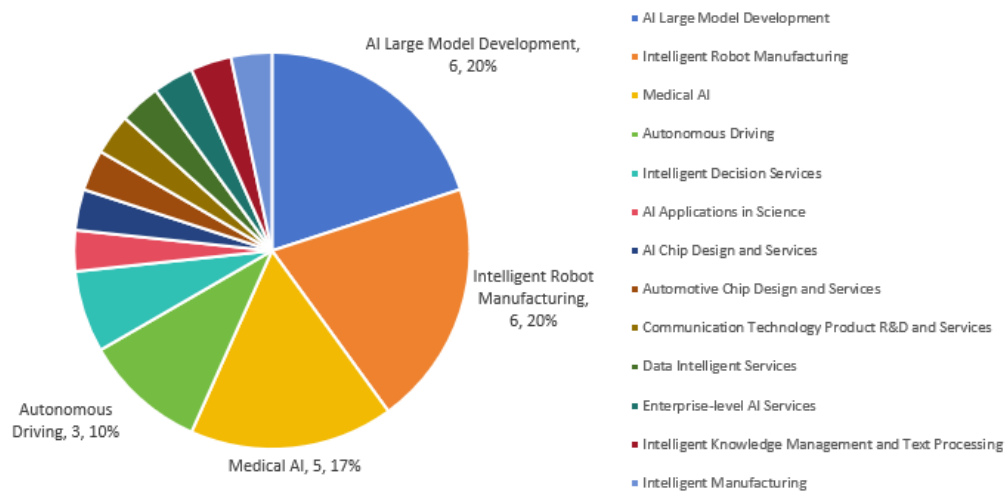
industries.

Figure 7. Top 30 Chinese AI Startups by Value Creation (Industry Distribution)

3.3.4 Year of Establishment

Dates of establishment of China Top 30 AI companies exhibit a clustering effect: most were established around 2016, coinciding with the rapid development of global AI technology. Their rapid growth and market performance reflect the upsurge of interest in the AI industry and demonstrate the founders' ability to respond in a timely fashion. Among the top 1-10 companies, two were established in 2023 (Baichuan Intelligence and Moonshot.AI), indicating that even the newest companies can emerge rapidly, likely due to their innovative capabilities in AI, large model development and rapid responses to market demand.

The dates of inception for the three tiers of companies range from 2014 to 2023. The top ten companies, with average establishment years of 2016 and 2023, are newer than both the top 11-20 companies (established from 2015 to 2020), and those ranked 21-30 (established from 2014 to 2021). This difference reflects the innovation speed and technological advancement of AI companies, suggesting that the development of technology is continually reshaping the entrepreneurial landscape. Companies established later may possess stronger advantages in technology and market response.

3.4 Comparative Analysis of Value Creation Sources for Chinese and North American & European AI Startups

The OxValue model considers five dimensions: technological novelty, market factors, technology lifecycle, risk and team, and complementary technologies. The analysis of valuation sources reveals both the differences and commonalities in the value drivers of Chinese and foreign AI startups, along with their relative strengths and weaknesses across several key dimensions. This provides the industry with an opportunity to gain in-depth insights into global AI startup value creation, while also highlighting the current state of development and challenges faced by Chinese companies in this field.

3.4.1 Comparison of Value Creation Dimensions (Levels) Between Chinese and North American & European AI Startups

The analysis of value creation sources (Figure 8) shows that North American & European AI Top 30 companies have significant advantages in technological novelty, risk and team, and complementary technologies, whereas China AI Top 30 companies demonstrate stronger performance in market factors. In the technology life cycle dimension, the scores of Chinese and North American & European AI companies are roughly equivalent, indicating that Chinese and foreign AI companies are relatively close in terms of the application stage. With the addition of Chinese companies, the technological novelty score of the global AI Top 30 companies has further increased to 22. This indicates that the entry of Chinese AI companies has injected new vitality into global AI technological innovation and suggests that the future global competition in AI technology will become more intense and diverse.
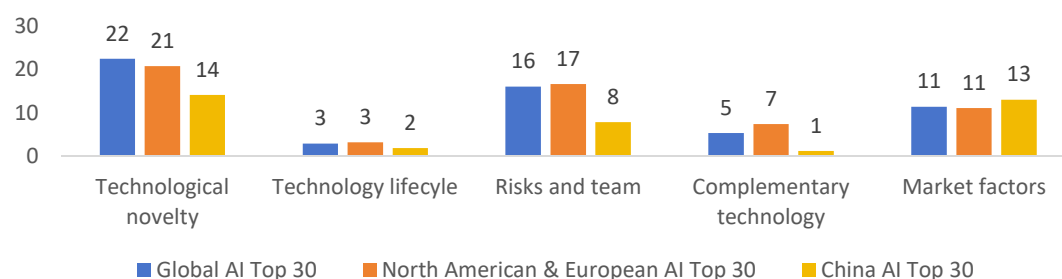

Figure 8. Value Creation Dimensions of AI Startups (Levels)

3.4.2 Comparison of Value Creation Dimensions (Proportions) Between Chinese and North American & European AI Startups

The pie chart of AI startup value creation sources (Figure 9) shows that technological novelty is the core factor in value creation for the global and North American & European top 30 AI companies, accounting for 37% and 36%, respectively. This indicates that technological innovation is the main driving force and foundation for the development of the global AI industry. For the top 30 Chinese AI companies, however, market factors take the lead with a 39% share, making it the primary driver of company growth.

It is noteworthy that Chinese AI startups perform relatively weakly in complementary technologies, accounting for only 4%, which is far below the average level of North American & European top 30 AI companies. This data highlights the challenges Chinese AI companies face in building a diversified and synergistic technological ecosystem, pointing to areas that need further enhancement in the future.

In summary, the value creation source analysis shows that global AI startups are primarily driven by technological innovation, whereas Chinese companies are more influenced by market factors. However, the lack of complementary technologies in Chinese AI startups presents a bottleneck in their value creation. To achieve sustainable growth and a global leadership position, Chinese AI companies need to increase their investments and efforts in technological innovation, team development, risk management, and the construction of a technology ecosystem. Additionally, they should actively seek opportunities for collaboration and exchange with leading international companies to jointly advance the progress and development of the industry.
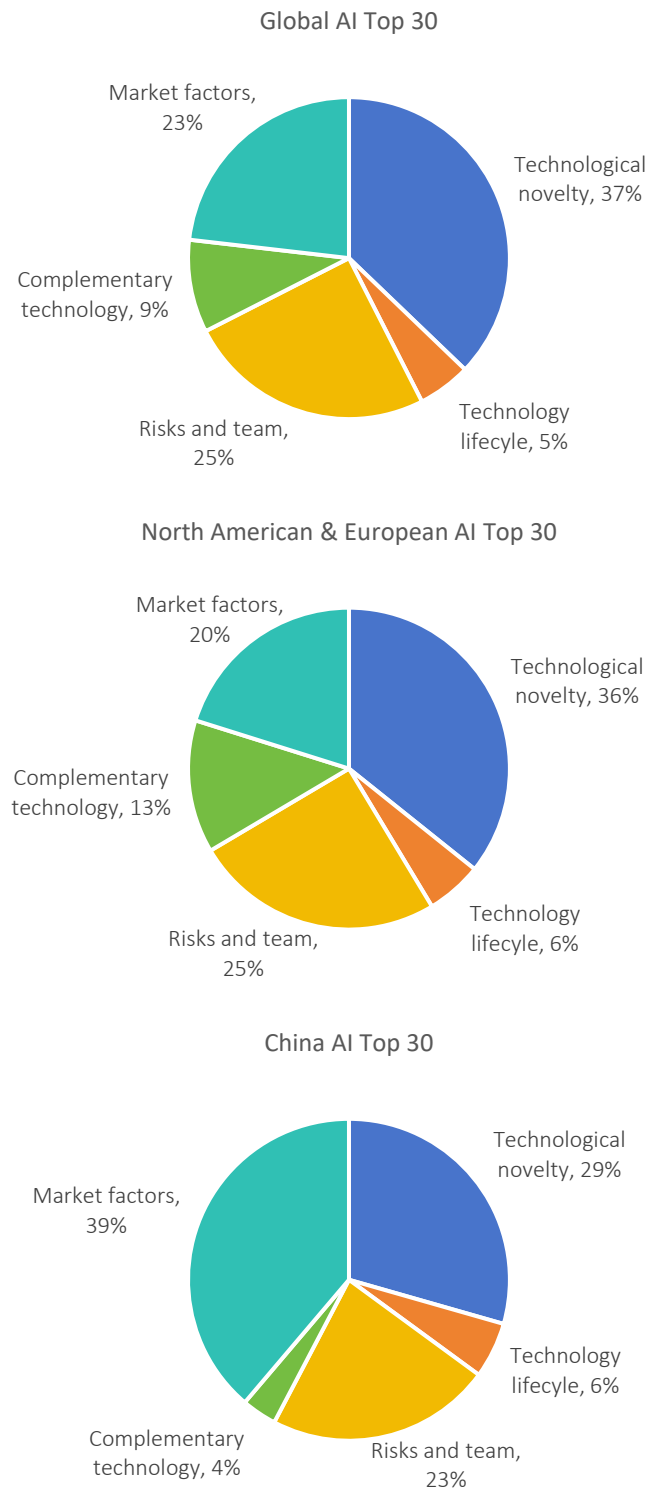
Global AI Top 30

- Market factors, 23%
- Technological novelty, 37%
- Technology lifecyle, 5%
- Risks and team, 25%
- Complementary technology, 9%

North American & European AI Top 30

- Market factors, 20%
- Technological novelty, 36%
- Technology lifecyle, 6%
- Risks and team, 25%
- Complementary technology, 13%

China AI Top 30

- Market factors, 39%
- Technological novelty, 29%
- Technology lifecyle, 6%
- Risks and team, 23%
- Complementary technology, 4%

Figure 9. Value Creation Dimensions of AI Startups (Proportions)

In-depth analysis of the value creation sources of AI companies (Figure 10) reveals different characteristics across various rankings and tiers of companies in the five key dimensions: technological novelty, technology lifecycle, risk and team, complementary technologies, and market factors.
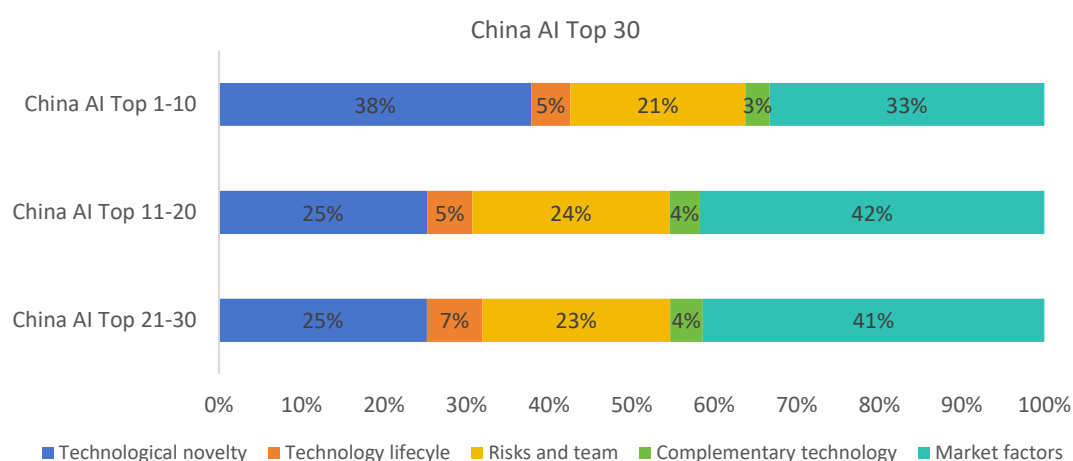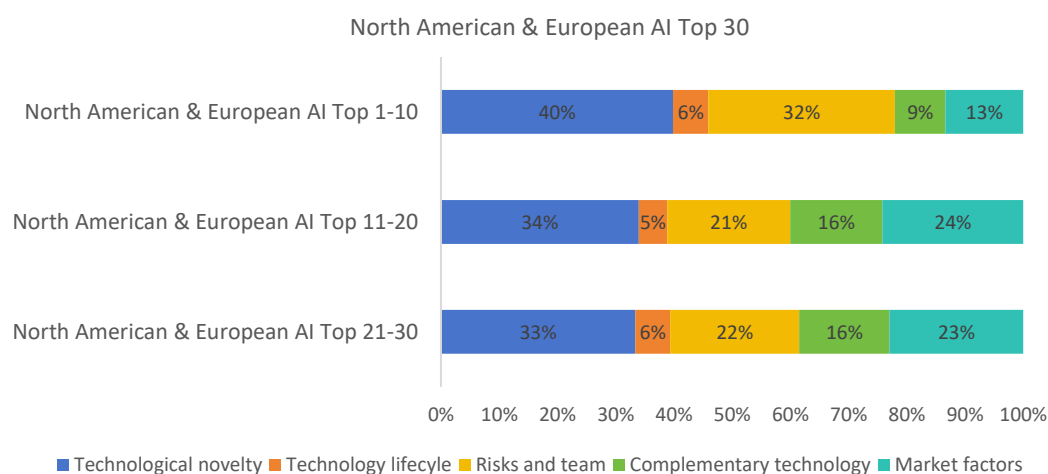
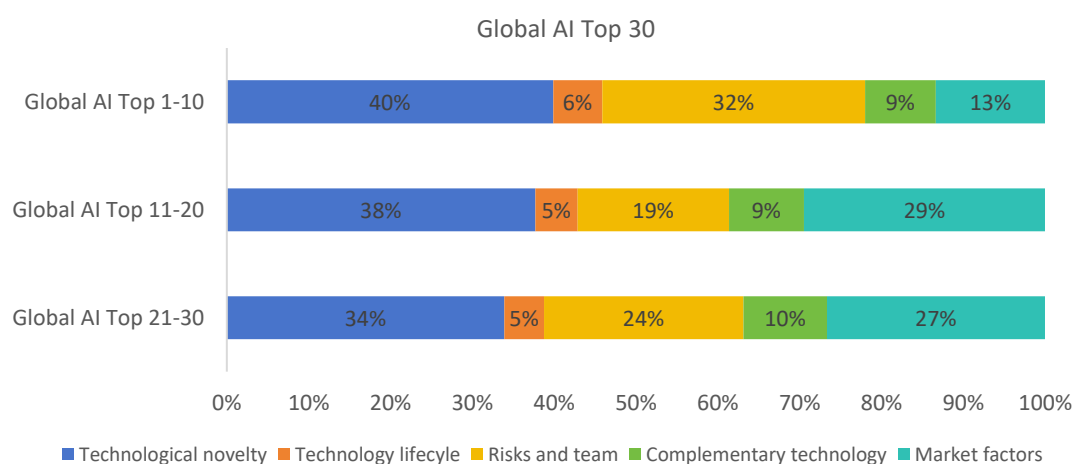**Figure 10. Value Creation Dimensions of AI Startups by Tier (Proportions)**

Firstly, technological novelty holds a significant position among global AI companies, especially among the top-tier companies. For the global AI Top 1-10 companies, 40%

of their valuation comes from technological innovation. In Chinese AI Top 1-10 companies, this proportion is also as high as 38%, indicating a strong advantage in the development and application of new technologies. However, as company tiers decrease, the contribution of technological innovation to valuation diminishes. For example, among Chinese AI Top 21-30 companies, this proportion drops to 25%, which may suggest that lower-tier companies need to invest more in innovation to enhance their market value.

Secondly, the contribution of the technology lifecycle to valuation is generally low, a trend observed across all tiers and regions. This may reflect the rapid technological iteration and short lifecycle in the AI industry, where companies must continuously update technologies to maintain competitiveness. In terms of risk and team, North American & European AI Top 1-10 companies lead with 32% of their valuation attributed to this dimension, indicating that investors place high importance on team stability and risk management capabilities. In contrast, this proportion is 21% for Chinese AI Top 1-10 companies, suggesting that top Chinese AI companies have room for improvement in team building and risk control.

Complementary technologies stand out more prominently in North American & European AI companies, particularly in the Top 21-30, where this dimension accounts for 16% of their valuation. This indicates that these companies excel in technology integration and cross-sector applications. Conversely, Chinese AI Top 1-10 companies have the lowest contribution from complementary technologies, at just 3%, indicating a need for improvement in this area among China's top AI companies.

Market factors play a larger role in Chinese AI companies, especially in the Top 11-20 and Top 21-30 tiers, where this dimension accounts for 42% of their valuation. This may reflect the strengths of Chinese AI companies in market positioning and commercialisation capabilities. In contrast, global AI Top 1-10 companies have the lowest contribution from market factors, at only 13%, indicating that global top-tier AI companies are more focused on technological innovation than market-driven strategies.

In conclusion, the valuation composition of global AI companies shows clear diversity. Top-tier companies typically excel in technological innovation and team building, while lower-tier companies need to strengthen these areas to enhance their market value. Chinese AI companies exhibit a clear advantage in market factors, while North American & European companies stand out in complementary technologies. These insights provide valuable guidance for investors, helping them make more informed investment decisions and offering companies direction for optimising their development strategies.

In addition to releasing the list of top 30 Chinese value-creating AI startups, the white paper also provides a list of the top 30 Chinese AI companies (including non-startups or listed AI companies) in the appendix. As industry leaders, these companies not only hold leading positions in the domestic market but also demonstrate strong technological innovation capabilities, collectively driving the flourishing development of the AI industry in China and globally.

Part 4: Summary and Outlook

In the current global wave of technology, AI, as one of the most disruptive technologies, is reshaping various industries at an unprecedented pace. AI startups, as pioneers of technological innovation, have experienced rapid development in recent years, attracting substantial investment and attention. This white paper analyses the current state of AI startups, providing insights into the characteristics and complexities of value creation for AI companies, and explores the effectiveness of different valuation methods and models. Traditional valuation methods, such as the cost approach, market approach, and income approach, while somewhat applicable to mature enterprises, often fail to comprehensively reflect the potential value of technology-driven and highly innovative AI startups. Therefore, this report proposes a new valuation model driven by AI, which comprehensively considers five key factors: technological novelty, market factors, technology lifecycle, risks and teams, and complementary technologies—the OxValue valuation model—aiming to more accurately assess the technological utility value of AI startups.

Benchmarking against advanced global valuation methods and practices, the OxValue model demonstrates outstanding performance in time efficiency improvement, risk management, and market forecasting. Comparisons reveal that the valuation process of the OxValue model is highly responsive. The OxValue model takes into account the risks associated with technology implementation, market and business risks, as well as financial and financing risks, providing a comprehensive risk assessment and mitigation strategy. Through in-depth analysis of market demand, competitive landscape, and market acceptance, the OxValue model can accurately predict market potential and growth trends.

Additionally, based on the OxValue valuation model, this white paper releases the list of the global, North American & European, and Chinese top 30 AI startups for 2024. The list shows that although European and American companies, particularly those in

the United States, lead the global AI innovation wave, eight Chinese companies have successfully entered the top 30 global AI startups. Moreover, the value creation of global AI startups primarily stems from their technological innovation, while the value creation of Chinese AI startups is more influenced by market size factors. Finally, this study points out a significant deficiency in complementary technologies in China, which has become one of the main bottlenecks for value creation in its AI startups.

Companies at different levels in the list exhibit diverse founding times, industry focuses, geographical distributions, and valuation compositions. In terms of founding time, whether North American & European or in China, the success of AI companies does not strictly depend on the duration of their establishment but rather on their capabilities in technological innovation, market adaptability, and strategic layout. Regarding industry distribution, the development of large AI models has become a global focus, while fields such as autonomous driving and intelligent robot manufacturing highlight the characteristics and advantages of Chinese companies. Geographically, California in the United States and Beijing in China have emerged as two core areas for AI companies, while firms from other countries like Canada, Germany, France, and the UK also hold a place in the global AI industry. In terms of valuation sources, technological novelty is the primary driving force behind the valuation of global AI companies (especially among the top 1-10 companies), while market factors play a significant role in Chinese AI companies (particularly in the top 11-20 and top 21-30 companies). Additionally, team strength and complementary technologies significantly impact valuations. These findings not only reveal the competitive landscape of the AI industry but also provide valuable insights for investors and policymakers, indicating that artificial intelligence technology will continue to drive industry innovation and economic growth globally.

In the future, with continuous breakthroughs in AI technology and the expansion of application fields, the valuation methods for AI startups will become more refined and diversified. As technologies such as deep learning, edge computing, and natural language processing advance, AI will be more deeply embedded in various industries, promoting industrial upgrading and intelligent transformation. AI valuation methods

will continue to evolve, integrating big data analysis and machine learning models to enhance the accuracy and reliability of valuations. Research on explainable AI and AI ethics will also provide new perspectives and methods for valuation models. Furthermore, global policy support and changes in market environments will influence developments in the AI sector. Valuation models must adapt to policy changes, focus on market dynamics, and provide more precise decision support for investors. By continually optimising valuation methods and models, the AI field will usher in a more precise, efficient, and equitable technological valuation system, driving global AI technology innovation and application.

References

Baltrušaitis, T., Ahuja, C., & Morency, L. P. (2018). Multimodal machine learning: A survey and taxonomy. IEEE Transactions on Pattern Analysis and Machine Intelligence, 41(2), 423-443.

Damodaran, A. (2009). The Dark Side of Valuation: Valuing Young, Distressed, and Complex Businesses. FT Press.

Damodaran, A. (2012). Investment Valuation: Tools and Techniques for Determining the Value of Any Asset (Vol. 666). John Wiley & Sons.

Devlin, J. (2018). BERT: Pre-training of deep bidirectional transformers for language understanding. arXiv preprint arXiv:1810.04805.

Dietterich, T. G. (2002). Ensemble learning. The Handbook of Brain Theory and Neural Networks, 2(1), 110-125.

Ding, J. (2018). Deciphering China's AI Dream: The Context, Components, Capabilities, and Consequences of China's Strategy to Lead the World in AI.

Feuerriegel, S., Hartmann, J., Janiesch, C., & Zschech, P. (2024). Generative AI. Business & Information Systems Engineering, 66(1), 111–126.

Fu, X., Ai, C., & Li, S. (2017). Valuation of early stage technology in the information and communication industry, presented at the 2017 European Academy of Management Annual Conference, Glasgow, UK.

Fu, X., Ai, C., Zhang, J., & Li, S. (2024). Unveiling the Value of Technology: A Utility Theory Framework and Its Application in Technology Startups, Technology and Management Centre for Development (TMCD) Working Paper Series No. 086, University of Oxford.

Koller, T., Goedhart, M., & Wessels, D. (2010). Valuation: Measuring and Managing the Value of Companies. John Wiley & Sons.

Krizhevsky, A., Sutskever, I., & Hinton, G. E. (2017). ImageNet classification with deep convolutional neural networks. *Communications of the ACM*, 60(6), 84-90.

Kumar, A. (2020). National strategy for artificial intelligence.

LeCun, Y., Bengio, Y., & Hinton, G. (2015). Deep learning. *Nature*, 521(7553), 436-444.

Lee, K. F. (2018). *AI Superpowers: China, Silicon Valley, and the New World Order*.

Houghton Mifflin.

Lu, W., Liu, J., & Ma, Y. (2023). The influence of large language models represented by ChatGPT on information resources management. *Document, Information & Knowledge*, 40(2), 6-9.

Miloud, T., Aspelund, A., & Cabrol, M. (2012). Startup valuation by venture capitalists: An empirical study. *Venture Capital*, 14(2-3), 151-174.

Moro-Visconti, R. (2024). The Valuation of Artificial Intelligence-Driven Startups. In Artificial Intelligence Valuation: The Impact on Automation, BioTech, ChatBots, FinTech, B2B2C, and Other Industries (pp. 293-344). Springer.

Van Den Oord, A., Dieleman, S., Zen, H., Simonyan, K., Vinyals, O., Graves, A., Kalchbrenner, N., Senior, A., & Kavukcuoglu, K. (2016). Wavenet: A generative model for raw audio. arXiv preprint arXiv:1609.03499.

Liu, X. C. (2024). A study on the valuation methods for startups. Management and Technology of SMEs, (4), 121-123.

Wu, H., & Wei, Y. H. (2016). Discussion on the valuation and financing issues of startups. Finance and Accounting, (11), 53-55.

Appendix: Top 30 Chinese AI Companies by Value Creation

Company Name	Year Established	Headquarters	Industry
Alibaba Cloud	2008	Hangzhou, Zhejiang	Cloud Computing
Baichuan Intelligent	2023	Haidian District, Beijing	AI Large Model Development
Baidu Smart Cloud	2000	Haidian District, Beijing	AI Big Data and Cloud Computing
AInnovation Technology	2018	Qingdao, Shandong	Enterprise AI Services
Cloudminds	2015	Minhang District, Shanghai	Intelligent Robot Manufacturing
Fourth Paradigm Technology	2014	Haidian District, Beijing	Enterprise AI Services
East Money Information	2005	Jiading District, Shanghai	Financial Services
Harbin Institute of Technology Robotics	2014	Harbin, Heilongjiang	Intelligent Robot Manufacturing
JD Technology	2020	Putuo District, Shanghai	Full Value Chain Technology Services
iFLYTEK	1999	Hefei, Anhui	Intelligent Speech
United Imaging	2017	Xuhui District, Shanghai	Medical AI
01.AI	2023	Haidian District, Beijing	AI Large Model Development
Megvii Technology	2011	Haidian District, Beijing	IoT AI
MiniMax	2021	Xuhui District, Shanghai	AI Large Model Development
Momenta	2016	Haidian District, Beijing	Autonomous Driving
SenseTime	2014	Haidian District, Beijing	AI Software
Tencent Cloud Smart	1998	Shenzhen, Guangdong	Cloud Computing
Infervision Medical Technology	2016	Haidian District, Beijing	Medical AI
UBTECH Robotics	2012	Shenzhen, Guangdong	Intelligent Robotics
WeRide	2017	Guangzhou, Guangdong	Autonomous Driving
Pony.ai	2016	Haidian District, Beijing	Autonomous Driving
SemiDrive	2018	Beijing Economic-Technological Development Area	Automotive Chip Design and Services
Transwarp Technology	2013	Xuhui District, Shanghai	Enterprise AI Software
Yidu Cloud	2014	Haidian District, Beijing	Medical AI
YITU Technology	2012	Xuhui District, Shanghai	AI Innovation Research
UCloud	2012	Yangpu District, Shanghai	Cloud Computing
Moonshot.AI	2023	Haidian District, Beijing	AI Large Model Development
CloudWalk Technology	2015	Guangzhou, Guangdong	Human-Machine Collaborative OS
Intellifusion	2014	Shenzhen, Guangdong	Full-Stack AI
Knowledge Atlas Technology	2019	Haidian District, Beijing	AI Large Model Development

Note: The companies listed include both publicly listed and non-startup enterprises. The ranking is not prioritised.