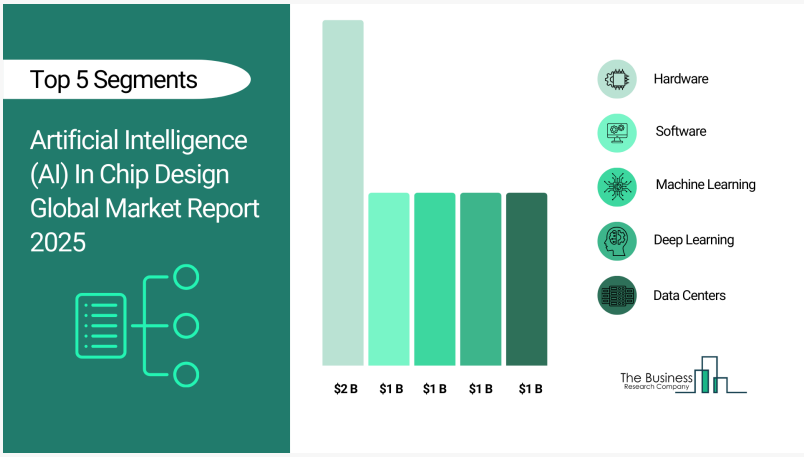
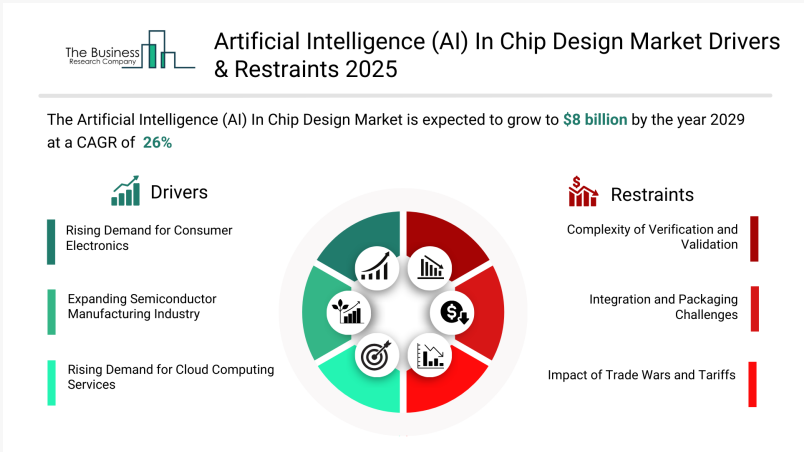
Artificial Intelligence (AI) In Chip Design Market In 2029

The Business Research Company's Artificial Intelligence (AI) In Chip Design Global Market Report 2026 – Market Size, Trends, And Forecast 2026-2035

LONDON, GREATER LONDON, UNITED KINGDOM, January 8, 2026 /EINPresswire.com/ -- Artificial Intelligence (AI) In Chip Design Market to Surpass $8 billion in 2029. Within the broader Information Technology industry, which is expected to be $12,711 billion by 2029, the Artificial Intelligence (AI) In Chip Design market is estimated to account for nearly 0.6% of the total market value.



Artificial Intelligence (AI) In Chip Design Market Report



Artificial Intelligence (AI) In Chip Design Market Report

Which Will Be the Biggest Region in the Artificial Intelligence (AI) In Chip Design Market in 2029

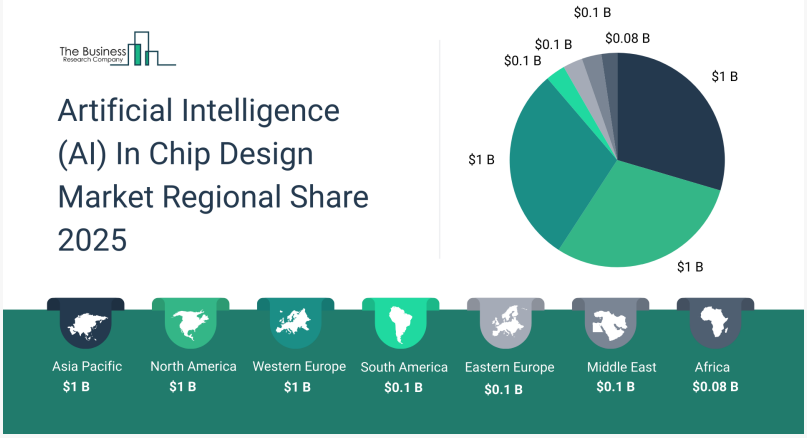
Asia-Pacific will be the largest region in the artificial intelligence (AI) in chip design market in 2029, valued at $2,855 million. The market is expected to grow from $797 million in 2024 at a compound annual growth rate (CAGR) of 29%. The exponential growth in the forecast period can be attributed to the growing trend towards autonomous vehicles and the rising demand for consumer electronics.

Which Will Be The Largest Country In The Artificial Intelligence (AI) In Chip Design Market In 2029?

The USA will be the largest country in the artificial intelligence (AI) in chip design market in 2029, valued at $2,241 million. The market is expected to grow from $757 million in 2024 at a

compound annual growth rate (CAGR) of 24%. The exponential growth in the forecast period can be attributed to the expansion of the semiconductor manufacturing industry and the growing demand for cloud computing services.

Request a free sample of the Artificial Intelligence (AI) In Chip Design Market report: https://www.thebusinessresearchcompany.com/sample_request?id=19302&type=smp



Artificial Intelligence (AI) In Chip Design Market Report

What will be Largest Segment in the Artificial Intelligence (AI) In Chip Design Market in 2029? The artificial intelligence (AI) in chip design market by type into hardware and software. The hardware market will be the largest segment of the artificial intelligence (AI) in chip design market segmented by type, accounting for 71% or $5,698 million of the total in 2029. The hardware market will be supported by the rising demand for high-performance computing infrastructure to train and simulate complex chip architectures, increasing adoption of GPUs, FPGAs and ASICs to accelerate AI-driven design processes, growing integration of AI accelerators in electronic design automation (EDA) tools, advancements in semiconductor fabrication technologies enabling faster and more efficient AI hardware, rising need for low-power and high-speed processing units in design optimization and increasing investments by chip manufacturers in AI-enabled hardware for enhanced scalability and design accuracy. Artificial intelligence chip design hardware helps speed up complex design and testing processes by providing powerful computing capabilities for tasks such as simulation, data analysis, and performance optimization. It uses specialized processors designed to handle large amounts of data quickly and efficiently, allowing engineers to test more design possibilities in less time. This results in faster development cycles, improved accuracy in chip architecture, and reduced energy use during the design process. This includes AI-powered chipsets (GPUs, TPUs, ASICs, FPGAs) used for intensive design simulations and also the end-product chips being designed. The dominance of GPUs is expected to continue, but ASICs and TPUs are growing rapidly as companies seek specialized, efficient silicon for their specific AI workloads

The artificial intelligence (AI) in chip design market is by technology into machine learning, deep learning, reinforcement learning, computer vision, and other technologies. The machine learning market will be the largest segment of the artificial intelligence (AI) in chip design market segmented by technology, accounting for 36% or $2,869 million of the total in 2029. The machine learning market will be supported by the increasing use of deep learning and neural network models to accelerate design space exploration and performance prediction, growing application of reinforcement learning for automated chip architecture optimization, rising integration of

supervised and unsupervised learning algorithms for anomaly detection and error correction during design verification, expanding adoption of ML-driven predictive analytics to enhance manufacturing yield and reliability, increasing use of large datasets for training design models, and continuous advancements in ML frameworks enabling faster and more efficient chip design workflows.

The artificial intelligence (AI) in chip design market is by application into data centres, automotive, consumer electronics, healthcare, industrial automation, and other applications. The data centres market will be the largest segment of the artificial intelligence (AI) in chip design market segmented by application, accounting for 36% or $2,858 million of the total in 2029. The data centres market will be supported by the growing demand for high-performance and energy-efficient chips to manage large-scale AI workloads, increasing adoption of AI-driven design automation to optimize chip architectures for server and cloud environments, rising deployment of AI-optimized processors to enhance computational efficiency and reduce latency, advancements in thermal management and power optimization technologies and expanding investments by hyperscale data center operators in AI-based chip design to support next-generation computing, storage and networking infrastructure. This makes perfect sense, as the cloud giants (Google, Amazon, Microsoft, Meta) are both the biggest consumers of AI chips and among the most prolific designers of their own custom AI silicon. The design process for these chips heavily relies on AI.

What is the expected CAGR for the Artificial Intelligence (AI) In Chip Design Market leading up to 2029?
The expected CAGR for the artificial intelligence (AI) in chip design market leading up to 2029 is 26%.

What Will Be The Growth Driving Factors In The Artificial Intelligence (AI) In Chip Design Market In The Forecast Period?
The rapid growth of the global artificial intelligence (AI) in chip design market leading up to 2029 will be driven by the following key factors that are expected to reshape semiconductor R&D, EDA workflows, and manufacturing handoff worldwide.

Rising Demand For Consumer Electronics- The rising demand for consumer electronics will become a key driver of growth in the artificial intelligence (AI) in chip design market by 2029. Consumer electronics are devices intended for personal or home use that utilize electronic technology, including items like smartphones, TVs, and audio systems. The demand for consumer electronics is rising due to increasing digitalization, as more people adopt smart devices to enhance convenience, connectivity, and access to information in daily life. Consumer electronics necessitate the demand for AI in chip design as advanced devices require smarter, faster and more energy-efficient processing to handle AI-driven features like voice recognition, image processing, and real-time personalization. As a result, the rising demand for consumer electronics is anticipated to contributing to a 1.0% annual growth in the market.

Expanding Semiconductor Manufacturing Industry- The expanding semiconductor manufacturing industry will emerge as a major factor driving the expansion of the artificial intelligence (AI) in chip design market by 2029. The semiconductor manufacturing industry produces microchips and integrated circuits that serve as the core components for electronic devices and systems. The semiconductor manufacturing industry is expanding due to the growing demand for advanced electronics in sectors like AI, 5G and electric vehicles, which require more powerful and efficient chips. The expansion of the semiconductor manufacturing industry drives the demand for AI in chip design as producing more advanced and efficient chips requires AI-driven design tools to optimize performance, reduce development time and manage increasing complexity. Consequently, the expanding semiconductor manufacturing industry is projected to contributing to a 0.7% annual growth in the market.

Rising Demand For Cloud Computing Services-The rising demand for cloud computing services as a major factor driving the expansion of the artificial intelligence (AI) in chip design market by 2029. Cloud computing services offer internet-based access to computing resources like storage, processing power and applications as needed. Cloud computing services are rising due to the increasing need for scalable and flexible IT solutions that allow businesses to efficiently manage data and applications without heavy investment in physical infrastructure. AI in chip design benefits cloud computing services by creating high-performance, energy-efficient processors that enable faster data processing and seamless scalability for handling large volumes of cloud-based workloads. Consequently, rising demand for cloud computing services is projected to contributing to a 0.5% annual growth in the market.

Growing Trend Towards Autonomous Vehicles- The growing trend towards autonomous vehicles will emerge as a major factor driving the expansion of the artificial intelligence (AI) in chip design market by 2029. Autonomous vehicles are driverless systems that rely on AI, sensors, and software to control navigation and operation without human input. Autonomous vehicles are rising due to advancements in artificial intelligence and sensor technologies, which enhance safety, efficiency, and convenience in transportation. AI in chip design is beneficial for autonomous vehicles as it enables the development of specialized processors that can handle complex real-time data processing for navigation, obstacle detection and decision-making with high speed and accuracy. Consequently, the growing trend towards autonomous vehicles are projected to contributing to a 0.2% annual growth in the market.

Access the detailed Artificial Intelligence (AI) In Chip Design Market report here: https://www.thebusinessresearchcompany.com/report/artificial-intelligence-ai-in-chip-design-global-market-report

What Are The Key Growth Opportunities In The Artificial Intelligence (AI) In Chip Design Market in 2029?
The most significant growth opportunities are anticipated in AI-driven chip design and hardware market, the artificial intelligence (AI) in chip design for data centres market, and the AI and deep learning in chip design market. Collectively, these segments are projected to contribute over $8

billion in market value by 2029, driven by rapid advances in automated semiconductor design workflows, increasing complexity of next-generation architectures, and the rising need for high-performance, energy-efficient chips in data-intensive applications. This surge reflects the accelerating adoption of AI and deep learning technologies that enable faster design cycles, improved power-performance-area (PPA) optimization, and greater first-silicon success fuelling transformative growth across the broader AI-enabled chip design ecosystem.

The AI-driven chip design and hardware market is projected to grow by $3,770 million, the artificial intelligence (AI) in chip design for data centres market by $1,964 million, and the AI and deep learning in chip design market by $1,951 million over the next five years from 2024 to 2029.

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The Business Research Company
Americas +1 310-496-7795
Europe +44 7882 955267
Asia & Others +44 7882 955267 & +91 8897263534
Email: info@tbrc.info

Oliver Guirdham
The Business Research Company
+44 7882 955267
info@tbrc.info
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