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Graphics Processing Unit (GPU) Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 to 2032

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Abstracts

The Global Graphics Processing Unit (GPU) Market was valued at USD 52.1 billion in 2023. Projections indicate a CAGR of 27% from 2024 to 2032. This surge is largely attributed to the widespread adoption of AI and ML across diverse sectors. Tasks like neural network training, image recognition, natural language processing (NLP), and predictive analytics, which are central to AI and ML workloads, demand substantial computational power. Given their prowess in parallel processing, GPUs are ideally suited for these AI-centric tasks. The gaming sector continually seeks enhanced resolutions, real-time ray tracing, and accelerated frame rates for a more immersive experience, all of which necessitate advanced GPUs.

Furthermore, with the rise of platforms like NVIDIA GeForce Now, Google Stadia, and Microsoft's xCloud, there is a pronounced shift towards cloud gaming. These platforms host powerful GPUs in the cloud, streaming games to users across various devices. For example, in April 2023, LG Electronics bolstered the cloud gaming capabilities of its 2023 TVs by introducing 4K support for NVIDIA GeForce NOW and rolling out the Boosteroid service. These enhancements, coupled with the 2022 integrations of Blacknut and Utomik, have broadened cloud gaming choices for LG TV users, subsequently driving up the demand for data centers equipped with high-performance GPUs.

The overall industry is classified into component, deployment mode, end-user, application, and region. The market is categorized by component into hardware, software, and services. Dominating the landscape, the hardware segment accounted for over 70% of the market share in 2023, with projections to exceed USD 200 million by 2032. A significant driver for the demand in GPU hardware is cryptocurrency mining, especially with currencies like Ethereum. End-user segmentation of the GPU market includes gaming, design & manufacturing, automotive, real estate, healthcare, and

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more.

The gaming sector represented approximately 37% share in 2023. The escalating appetite for high-resolution gaming underscores the need for sophisticated GPUs capable of real-time rendering and seamless gameplay. Asia Pacific GPU market commanded roughly 40% share in 2023, with expectations of notable expansion through 2032. Mobile gaming reigns supreme in Asia Pacific, with a significant number of gamers engaging via smartphones. Highlighting the region's prominence, a report titled “India Gaming Opportunity: Robust Fundamentals to Power Continued Growth” by the Interactive Entertainment and Innovation Council (IEIC) and WinZo, underscores India as the world's largest gaming market.

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10.3 Apple Inc.
10.4 ARM Holding
10.5 ASUS
10.6 Autodesk Inc.
10.7 Dassault Systemes, Inc.
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10.9 Google, Inc.
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10.11 Imagination Technologies Group
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10.18 Qualcomm Technologies
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