Artificial Intelligence (AI)-Powered Prosthetics Market Size, Share, Competitive Landscape and Trend Analysis Report

The Business Research Company's Artificial Intelligence (AI)-Powered Prosthetics Market Size, Share, Competitive Landscape and Trend Analysis Report

The Business Research Company

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How Large Will The Artificial Intelligence (AI)-Powered Prosthetics Market Be By 2025?

> It will grow to $3.08 billion in 2029 at a compound annual growth rate (CAGR) of 15.9%."
>
> *The Business Research Company*

The market size for artificial intelligence (AI) driven prosthetics has seen a significant increase in recent years. It's projected to expand from $1.47 billion in 2024 to $1.71 billion in 2025, boasting a compound annual growth rate (CAGR) of 16.3%. This rise in the historic period can be credited to a number of factors including an uptick in diabetes-related amputations, an increased call for state-of-the-art mobility solutions, a surge in traumatic limb loss incidents, heightened investment in bionic technologies, and a growing preference for myoelectric prosthetics.

The market for prosthetics powered by artificial intelligence (AI) is anticipated to experience accelerated growth in the upcoming years. The market value is projected to reach $3.08 billion in 2029, with a compound annual growth rate (CAGR) of 15.9%. The increase during the forecast period can be attributed to factors such as the growing acceptance of brain-computer interface technology, a surge in demand for tailored prosthetic solutions, increased funding in AI-infused rehabilitation technology, expanding use of machine learning in prosthetics, and enhanced government backing for assistive technologies. The forecasted period will witness major trends like improvements in neural control interfaces, the creation of lightweight intelligent materials,

advancements in self-taught prosthetic algorithms, the growth of printed customizable solutions, and the emergence of affordable AI-enabled bionic limbs.

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What Are The Major Driving Forces Influencing The Artificial Intelligence (AI)-Powered Prosthetics Market Landscape?
The rise in diabetes cases is anticipated to boost the expansion of the artificial intelligence (AI)-based prosthetics market. Diabetes, which occurs when the body either doesn't produce enough insulin or doesn't use it effectively, leading to persistently high blood sugar levels, is on the rise, largely due to static lifestyles. The diminished physical activity correlates to slowed metabolism and weight gain, increasing insulin resistance risk. Diabetes-related complications, notably poor circulation and nerve damage, could necessitate limb amputations, subsequently surging the demand for AI-based prosthetics that improve mobility and patient's life quality. For instance, the number of pre-diabetes identified persons by the National Health Service, a publicly funded healthcare system in the UK, spiked to 3,615,330 in 2023 from 3,065,825 in 2022, a rise of 18%. Furthermore, there was approximately 25% growth in cases among those under 40, increasing from 173,166 in 2022 to 216,440 in 2023. As such, this rising diabetes prevalence is fueling the AI-based prosthetics market's growth.

Who Are The Top Players In The Artificial Intelligence (AI)-Powered Prosthetics Market?
Major players in the Artificial Intelligence (AI)-Powered Prosthetics Global Market Report 2025 include:

- Ottobock SE & Co. KGaA
- Össur hf
- Blatchford Limited
- BrainCo Inc.
- BrainRobotics Inc.
- Open Bionics Ltd.
- Point Designs Inc.
- Ambionics Ltd.
- Coapt LLC
- Vincent Systems GmbH

What Are The Key Trends Shaping The Artificial Intelligence (AI)-Powered Prosthetics Industry?
Key players in the AI-enhanced prosthetics industry are increasingly striving towards the innovation of methods like neural interface integration to improve limb capabilities, amplify the adaptability of the user, and offer amputees a near-natural mobility for routine and specialized tasks. Neural interface integration involves AI-led systems that interpret brain or muscle impulses via machine learning algorithms and sensor networks. The goal of these systems is to provide immediate, instinctive control of prosthetic limbs that mirror their natural counterparts

in terms of precision and responsiveness. For instance, Esper Bionics, a company based in Ukraine, specializing in bionic prosthetics, made significant strides in the aid of prosthetic technology by launching its Esper Hand 2 in May 2025. This is a waterproof, AI-driven prosthetic hand that adjusts to user action, provides enhanced grip strength, and works effectively under tough conditions like rain. This development offers users a smart, robust solution intended to improve real-world operations and everyday living productivity.

Market Share And Forecast By Segment In The Global Artificial Intelligence (AI)-Powered Prosthetics Market
The artificial intelligence (AI)-powered prosthetics market covered in this report is segmented

1) By Type: Implantable Prosthesis, Non-Implantable Prosthesis
2) By Technology: Microprocessor-Controlled Prosthetics, Myoelectric Prosthetics, Robotic Prosthetics, Electric-Powered Prosthetics, Hybrid Technologies
3) By Application: Amputee Mobility, Rehabilitation, Sports Prosthetics, Military, Daily Activities
4) By End User: Hospitals, Prosthetic Clinics, Rehabilitation Centers, Other End Users

Subsegments:
1) By Implantable Prosthesis: Cochlear Implants, Retinal Implants, Deep Brain Stimulation Implants, Artificial Heart Valves, Dental Implants, Orthopedic Joint Implants
2) By Non-Implantable Prosthesis: Upper Limb Prosthetics, Lower Limb Prosthetics, Exoskeletons, Cosmetic Prosthetics, Prosthetic Liners And Sockets

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Artificial Intelligence (AI)-Powered Prosthetics Market Regional Insights
In the Artificial Intelligence (AI)-Powered Prosthetics Global Market Report 2025, North America is identified as the largest market in 2024. Additionally, the Asia-Pacific region is projected to experience the most rapid growth during the forecast period. The report includes comprehensive analysis of various regions including Asia-Pacific, Western Europe, Eastern Europe, North America, South America, the Middle East, and Africa.

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