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The 2025 World Humanoid Robot Games

A milestone for 5G-Advanced-enabled humanoid robots

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Introduction

Imagine a future where humanoid robots seamlessly integrate into our daily lives, performing tasks with precision, agility, and intelligence in industrial manufacturing, healthcare, and home services. Interestingly, these robots are already here among us. The 2025 World Humanoid Robot Games, the first-ever global sports event featuring humanoid robots as the primary participants, have set the stage to showcase this cutting-edge technological revolution.

A triumphant display of humanoid robotics technology

The 2025 World Humanoid Robot Games shattered the perception of robots as clumsy and oversized toys. Instead, it showcased the humanoid robot's potential as an intelligent assistant capable of performing complex tasks with precision, agility, and efficiency.

With 487 matches across 26 categories, the event featured a wide range of activities, including track and field events, industrial applications, and healthcare scenarios. The robots' performances were not only technically impressive but also artistically engaging and featured choreographed dance routines, musical performances, and even fashion displays.

More importantly, the event's success extended far beyond the competition arena. More than 60 influential media outlets and 20 analysts participated, and the event garnered nearly 8,000 related reports and a total online viewership of 150 million. On social media, it created 23 trending topics,

amassing more than 350 million views. The hashtag "#Robot Half-Marathon Breaks 2 Hours" alone garnered 230 million views in two hours, highlighting global fascination with this technological milestone.

A revolution driven by advanced cellular technology

The 2025 World Humanoid Robot Games have not only redefined the capabilities of humanoid robots but also highlighted the transformative potential of the 5G-Advanced (5G-A) network by enabling autonomous operation, intelligent decision-making, and seamless connectivity. The event deployed an ultra-wideband 5G-A network with high-and low-band coordination, achieving peak downlink speeds of 10Gbps and uplink speeds of 4Gbps. All the humanoid robots at the event were connected to the network through an embedded 5G-A module. With a network latency of just 20 milliseconds and a reliability rate of 99.999%, the robots demonstrated precise coordination in various competitive events, from football matches to choreographed performances.

A humanoid robot requires constant, low-latency communication with the cloud for information processing and retrieval, because on-device computing is limited. Vendors have opted to leverage the ultra-low-latency and high-bandwidth capabilities of 5G-A to enable seamless collaboration among cloud, edge computing, and end devices. This innovation allows robots to make autonomous intelligent decisions while maintaining low power consumption. By leveraging the cloud for computational tasks, robots can perform complex operations without being bogged down by hardware limitations.

Traditionally, humanoid robots relied on Wi-Fi, limiting their range, performance consistency, and reliability. Ubiquitous 5G-A coverage has enabled these robots to operate autonomously without distance constraints. This advance significantly expands their operational range, making them more versatile and practical for real-world applications.

Finally, the 5G-A network also features an autonomous intelligent operations system. This system monitors network status in real time, diagnoses anomalies autonomously, and resolves issues using the appropriate approach. The result is seamless, uninterrupted robot operation, especially in mission-critical and business-critical use cases.

With ultra-large bandwidth, extremely low latency, and massive connectivity, 5G-A has become the foundational infrastructure for the embodied intelligence industry. The evolution from Wi-Fi robots to 5G-A robots marks a transformative leap in the capabilities and applications of humanoid robotics. Gone are the days when robots were constrained by a limited range and required constant human supervision. With 5G-A, they can be deployed without limitations on operational flexibility and scalability.

Strong commercial values and ecosystem potential

At the event, robots demonstrated their ability to handle complex tasks, including industrial material processing and sorting tasks, proving their value in manufacturing environments. In healthcare settings, robots demonstrated their potential for tasks such as medical sorting and

patient assistance, paving the way for more efficient and reliable healthcare services. Humanoid robots are poised to revolutionize home services such as cleaning and personal assistance, making them more efficient and accessible.

The event is not limited to the above industries but even drives the commercial success of humanoid robots in cultural and educational sectors. Noetix Robotics secured 2,000 orders for educational and cultural tourism robots within three months of winning the football competition. Similarly, the U-Robot, designed specifically for the competition, sold more than 500 units in its first month.

The audience was also treated to an immersive experience, thanks to the 5G-A x AI interactive display areas. These areas featured live streaming, cloud gaming, and interactive activities with robots, allowing attendees to experience the network's high speed and low latency firsthand.

Ultimately, the success of the event relied on close collaboration with partners including Beijing Unicom, Beiao Group, Huawei, and various humanoid robot manufacturers. China Unicom leveraged its 5G-A network to build an intelligent, efficient, and secure communications system that provided solid network support for the event, and Huawei provided the core 5G-A technologies with enhancements in assisted uplink, uplink carrier aggregation, and innovative slot allocation. As the event operator, Beiao Group used its professional expertise to meet the specific needs of robot competition, such as installing fire-resistant floor mats, shock-absorbing panels, and professional track surfaces.

Conclusions

The advancements showcased at the 2025 World Humanoid Robot Games are not just technological feats; they are harbingers of a new era in commercial applications. By transforming real-world needs into competitive events, the games established a new paradigm for technology verification, replacing traditional proof-of-concept models with public showcases.

Moreover, the event introduced a replicable template for future applications in the humanoid robot industry, enabling robots to transition from fixed workstations to cross-domain operations, unlocking new deployment possibilities. As the industry stands on the brink of this new era, one thing is clear: the future of task automation and workforce augmentation is embodied in the seamless integration of humanoid robots and advanced cellular networks. The commercial implications are immense, offering unprecedented opportunities for innovation, efficiency, and growth.

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Appendix

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Omdia consulting

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We hope that this analysis will help you make informed and imaginative business decisions. If you have further requirements, Omdia's consulting team may be able to help your company identify future trends and opportunities.

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