

中国科技战略 China Technology Strategy

世界机器人大会：“机器人+”赋能百业千行，国产零部件技术布局日趋全面 World Robot Conference: “Robot+” Empowering Industries, Layout of Domestically Produced Parts Becoming Comprehensive

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 热点速评 Flash Analysis

(Please see APPENDIX 1 for English summary)

事件

8月16-21日，2023世界机器人大会（WRC）在北京举行，以“开放创新，聚享未来”为主题，由论坛、博览会、大赛等活动组成。320余位各国组织代表、行业内专家学者及企业家开展演说和高峰对话，话题围绕全球开放合作、时代机遇与挑战、技术趋势、应用场景、“机器人+”创新应用场景、产业生态建设等。博览会集中展示产业链上下流成果，设有10个应用场景展区及1个关键零部件展区，并同期举办27项机器人赛事。

点评

机器人产业聚焦前沿零部件技术，带动国产零部件发展潜力，持续进行创新融合。当前机器人产品及技术的发展已经突破单机机器人，通过融合各类视觉、力觉、及一体化执行等方面，开始转向综合解决方案。波士顿动力公司创始人兼CEO Marc Raibert 强调硬件与软件对机器人技术的同等重要性。传统三大核心零部件保证了基础移动、控制及执行能力，而新兴零部件主要侧重感知及决策，旨在推动机器人的商业化。中国电子学会副理事长兼秘书长陈英认为当下机器人的全域感知、智能决策、准确执行等能力已成为融合发展的重要载体。大会现场展出的各类新型产品都开始使用视觉、传感器等新型零部件，其中四足机器人为其发展的首要推力，与新型零部件结合后具备计算机视觉和智能交互特性。国内六维力传感器逐步进入头部公司供应链，比起海外厂商拥有更高性价比。因此人形机器人的发展大力提升了证券市场的零部件板块，带来投资新机遇。

“机器人+”行业应用场景多样化，智能创新成果融入社会各领域。WRC展览会约有160家企业机构参展，带来近600款先进技术及60款新产品首次亮相，闭幕成交额累计85亿元。应用场景横跨农业、建筑、制造、能源、商贸物流、医疗养老、教育等板块，各类作业已与机器人的使用达成初步结合。波士顿动力更新其人形机器人ATLAS开发的最新近况，侧重运动拟人的发展；达闼机器人首次展出65kg人形双足机器人，集成60+智能柔性关节及多模态大型RobotGPT，实现更多样精准的移动及智能化的感知、决策、执行等交互功能。EX机器人展出多个仿生机器人，涉及仿真皮肤、机械结构、柔性关节、预计未来应用于教学及直播等场景；申昊科技发布“朱阙”空中巡检产品，突破传统工业大健康领域的诸多限制；力升高科展出火情侦察机器人，全景采集灾情图像；沈阳新松机器人搭载新一代汽车焊装线工艺智能控制系统，已在各知名汽车企业应用；小米发布具备先进运动能力的仿生四足机器人CyberDog2和双足人形机器人CyberOne；江苏博田机器人呈现蔬果自动采摘机器人；伴随AI交互、环境感知能力等技术发展，仿生机器人成本有望下探，为机器人渗透进大众日常生活、提高生活质量打下坚实基础。

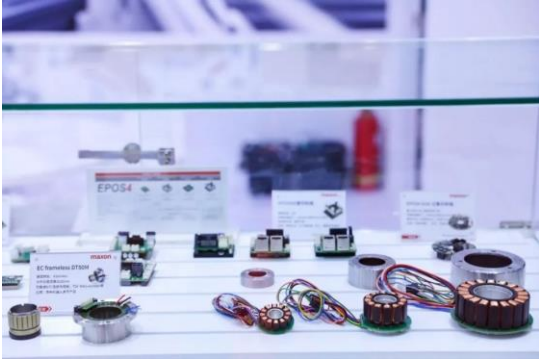
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风险

机器人产业迭代不及预期，零部件厂商导入供应链不及预期，宏观经济下行。

博览会期间展品亮点

图 1 关键零部件展区：六维力传感器



资料来源：腾讯网，海通国际

图 2 小米 Cyberdog & CyberOne



资料来源：小米官网，海通国际

图 3 BCI 脑控机器人技能大赛



资料来源：中国电子协会，海通国际

图 4 EX ROBOT 人形机器人



资料来源：Ex Robots 官网，海通国际

图 5 达闼科技 Cloud Ginger 人形机器人投篮



资料来源：新华社，海通国际

图 6 力升科技侦察机器人



资料来源：京报网，海通国际

APPENDIX 1

Summary

Event

The 2023 World Robot Conference (WRC) was held in Beijing from August 16th-21st, with the notion of "Open Innovation, Sharing the Future", consisting of forums, exhibitions, competitions and other activities. More than 320 representatives of organizations from various countries, experts, scholars and entrepreneurs in the industry gave speeches and summit dialogues. The topics focused on global open cooperation, opportunities and challenges of the times, technology trends, application scenarios, "Robot +" innovative application scenarios, industrial ecological construction, etc. The expo focuses on displaying the results of the upstream and downstream of the industrial chain, with 10 application scene exhibition areas and 1 key parts exhibition area, and 27 major robot competitions.

Comments

The robot industry focuses on cutting-edge parts technology, drives the development potential of domestic parts, and continues to innovate and integrate. The current development of robot products and technologies has broken through single-machine robots and begun to turn to comprehensive solutions by integrating various vision, force sense, and integrated execution aspects. Marc Raibert, founder and CEO of Boston Dynamics, emphasized the equal importance of hardware and software to robotics. The traditional three core components guarantee the basic movement, control and execution capabilities, while the emerging components mainly focus on perception and decision-making, aiming to promote the commercialization of robots. Chen Ying, Vice Chairman and Secretary-General of the Chinese Institute of Electronics, believes that the current capabilities of robots such as full-area sensing, intelligent decision-making, and accurate execution have become important carriers of integrated development. Various new products at the conference have begun to use new components such as vision and sensors. Among them, quadruped robots are the primary thrust of their development. When combined with new components, they have computer vision and intelligent interaction characteristics. Chinese six-dimensional force sensors have gradually entered the supply chain of leading companies, and are more cost competitive than overseas manufacturers. Therefore, the development of humanoid robots has greatly improved the components sector of the securities market, bringing new opportunities for investment.

The application scenarios of the "Robot+" industry are diversified, and intelligent innovation achievements are integrated into all fields of society. Approximately 160 companies and institutions participated in the WRC exhibition, bringing nearly 600 advanced technologies and 60 new products to their debut. The closing turnover totaled 8.5 billion yuan. The application scenarios span agriculture, construction, manufacturing, energy, commerce and logistics, medical and elderly care, education and other sectors, and various operations have reached a preliminary combination with the use of robots. Boston Dynamics updated the latest status of the development of its humanoid robot ATLAS, focusing on the development of motion anthropomorphism; Data Robot exhibited a 65kg humanoid biped robot for the first time, integrating 60+ intelligent flexible joints and multi-modal large-scale RobotGPT to achieve more diverse and precise movements and intelligent perception, decision-making, execution and other interactive functions. EX Robot exhibited several bionic robots, consisting of simulated skin, mechanical structure, flexible joints, which are expected to be used in teaching and live broadcasting in the future; Shenhao Technology released the "Zhu Que" aerial inspection product, breaking through many restrictions in the traditional industrial health fields.; Lesentech exhibited a fire detection robot, which can collect disaster images in a panoramic view; Siasun's robot is equipped with a new generation of automobile welding line process intelligent control system, which has been applied in various well-known automobile companies; Xiaomi released a bionic quadruped robot CyberDog2 and the bipedal humanoid robot CyberOne; AgriBot presents an automatic vegetable and fruit picking robot, with the development of AI interaction and environmental perception; The cost of bionic robots is expected to drop in the future, laying a solid foundation for robots to penetrate into the daily routine and improve the quality of life.

The industry has broken through the mature industrial robot industry, and the rapidly rising service robots will expand the application of personal scenarios. The WRC competition accelerates talent training and technological innovation, covering technical assessments such as group intelligence and human-computer interaction, as well as collaborative robots, rehabilitation robots and other products. The "BCI Competition" explores the innovative application of brain-computer interface technology in the field of medical care and elderly care; The main application scenarios of the humanoid robot products exhibited at the EXPO are still limited to basic applications, and it will take time to achieve large-scale commercialization. The robot production and marketing model will gradually expand from B2B to B2C. In the shorter term, industrial scenarios will still be given priority, but in the longer run, the application for personal scenarios will be expanded.

Risks

The progress of robot technology implementation is slower than expected; progress of integration of parts manufacturers into the supply chain is slower than expected; macroeconomic downturn.

附录 APPENDIX

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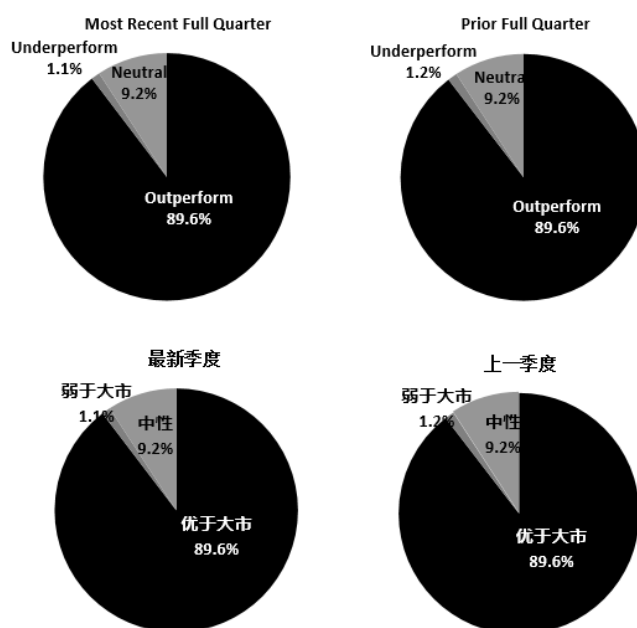
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各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100; 其他所有中国概念股 – MSCI China.

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