# 人形机器人月报：机器人新品密集发布，融资持续进行

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## 投资要点：

### ➢ 政策支持

- **重庆将重点开发人形机器人、医疗机器人等中高端机器人。**根据重庆市经济和信息化委员会官网，10 月 28 日，重庆市经济和信息化委员会等 8 部门联合印发《重庆市“机器人+”应用行动计划(2024—2027 年)》，提出到 2027 年，将创建一批“机器人+”应用场景，重点发展一批中高端机器人。《行动计划》明确提出，至 2027 年，重庆市将在经济社会各领域广泛应用机器人技术，特别是在制造业、农业、智能建造、公共服务以及特种应急五大领域取得显著的应用成效。通过突破关键技术、开发中高端产品、培育重点企业、搭建供需平台、探索创新模式、打造体验中心以及建设应用试点等一系列措施，全面提升机器人产品的市场竞争力，形成具有重庆特色的“机器人+”应用生态。

### ➢ 整机动态

- **小鹏 AI 机器人 Iron 正式亮相。**根据小鹏汽车官网、中国机器人网公众号，11 月 6 日，2024 小鹏 AI 科技日活动中，AI 机器人 Iron 正式亮相。该机器人采用仿人结构设计，身高 178cm，体重 70kg，拥有 62 个主动自由度，以 1:1 类真人的姿态展现，其拥有超 60 个关节，可模拟人类站立、躺卧、坐。小鹏图灵 AI 芯片为其提供了一个聪明的大脑，拥有自主思考甚至推理的能力；端到端大模型让其具备行走能力、手指可完成抓、拿、放等精巧的任务；小鹏天玑 AIOS 则赋予了其更流畅的对话能力。IT 之家从发布会获悉，小鹏 Iron 已进入小鹏汽车的工厂工作，即将发布的小鹏 P7+汽车的部分组件就是由 Iron 组装的。小鹏汽车明年将开放工厂参观。

- **国内首台超轻量级人形机器人登场。**根据 EVH1000 微信公众号，10 月 28 日，成都人形机器人创新中心在成都科创生态岛全国首发成都造人形机器人“贡嘎一号”（Konka-1），目前该产品为国内唯一、全球唯三，真正拥有人形机器人“最强大脑”的超轻量级人形机器人整机产品。“贡嘎一号”面世便创造多项纪录：整机重量 25KG，为全球最轻量产品，而业界产品普遍在 60KG-250KG 范围；最大负载 5.5KG，达到世界一流水平；负重比为 0.22，高于业界平均水平 5 倍以上；续航时间达 8 小时，跻身全球续航最长行列，行业平均续航在 1 小时左右。从这些数值可以看出，“贡嘎一号”是一款技术领先性能强悍的超轻量级人形机器人产品。

- **众擎机器人首款全尺寸大人形机器人正式发布。**根据中国机器人网微信公众号，10 月 24 日，众擎机器人首款全尺寸大人形机器人 SE01 正式发布，登陆全球市场。SE01 采用自主研发的一体化谐波关节模组，结合卓越的强化学习和模仿学习运控方案，通过端到端神经网络模型，实现了出色的自然步态。其设计显著缩小了 AI 与人类之间的差距，使机器人变得像人一样灵活。SE01 整机共 32 个自由度，核心关节均为团队成员自主研发的高性能谐波力控关节模组，工业稳定性强悍；机械双臂采用绳驱动柔性力控方案打造，设计寿命超过 10 年；灵巧手在自主研发的背景下，成本也得到了大大压缩；机身由航空级别的铝合金材质构成，在外壳坚硬的同时，手臂也异常强壮。除了过硬的关节条件，SE01 还内置 NVIDIA 和 Intel 双处理器，配备三组实感双目摄像头，利用视觉神经网络技术，构建起一套先进的深度立体视觉系统。

- **核心零部件动态**

- **雷赛智能携众多产品亮相"星耀鹏城·专精特新"超级发布会。**近日，深圳"星耀鹏城·专精特新"超级发布会机器人企业创新发展专场活动在南山区深圳湾科技生态园举办，雷赛智能作为深圳重点培育的国家级专精特新"小巨人"企业代表应邀出席，雷赛智能曹通博士分享了当前人形机器人产业发展形势以及雷赛机器人相关产品技术上取得的一系列创新成果。作为运动控制领域的领航者，雷赛智能自 2018 年起便前瞻性布局机器人行业，特别是在 AGV/AMR 和协作机器人细分市场，每年输出数万套伺服系统解决方案。公司接连推出的 FM2 系列超高密度型无框电机、RM 系列机器人关节模组、LD3mini 微型伺服驱动器、以及无刷空心杯电机，不仅满足了人形机器人对精密控制与高效能的需求，更为行业客户提供了性能卓越、成本可控的国产化替代方案。

- **投融资动态**

- **星海图完成超 2 亿元 Pre-A 轮融资。**根据中国机器人网公众号，11 月 4 日，星海图（苏州）人工智能科技有限公司官宣完成超 2 亿元 Pre-A 轮融资。本轮融资由高瓴创投（GLVentures）、蚂蚁集团领投，米哈游、无锡创投集团、同歌创投、Funplus 及老股东跟投，华兴资本担任财务顾问。本轮融资完成后，星海图将继续推动具身本体及核心模组、端到端 AI 算法以及场景解决方案的研发及落地，同时持续拓展海外市场、构建全球竞争力，打造世界领先的物理世界智能体。

- **月泉仿生获近亿元 Pre-A 轮融资。**根据中国机器人网公众号，人形机器人企业北京达奇月泉仿生科技有限公司近期完成近亿元 Pre-A 轮融资。本轮融资由洪泰基金领投，长兴基金、中关村启航基金跟投。募集资金将主要用于人形机器人研发投入，公司人才和技术壁垒的持续构建，以及商业化加速交付落地。浪潮资本担任本次融资独家财务顾问。月泉仿生于 2023 年 6 月正式运营，9 月获得来自中关村发展集团启航投资的千万元天使轮融资，运营以来，月泉仿生相关技术产品已签署近千万元商业化订单。

- **知行机器人拿下数千万 B 轮融资。**根据中国机器人网公众号，知行机器人科技（苏州）有限公司于近期完成数千万元 B 轮融资。本轮融资由诚美资本与中关村智友科学家基金联合领投，融得资金将用于公司核心产品及系统的研发、拓展及推广。公司致力于研发灵活、可靠、安全、智能的机器人手及机器人系统解决方案，目前已迅速成长为一家专注于灵巧手及具身智能机器人研发与生产的国家级高新技术企业。截至目前，公司已累计服务客户超过 300+家，与国内 50+家企业建立合作，积累了多个行业智能制造及自动化成功案例。

- **投资建议。**11 月人形机器人关注标的组合：三花智控、柯力传感、绿的谐波、恒立液压、优必选、兆威机电、汇川技术、伟创电气、贝斯特、索辰科技。

- **风险提示。**人形机器人产业化进度不及预期、政策推动不及预期等。

**表 1 2021-2024 年国家层面人形机器人相关政策/计划**

| 时间 | 相关部门 | 政策/计划 | 相关内容摘要 |
|---|---|---|---|
| 2024 | 工业和信息化部等七部门 | 关于推动未来产业创新发展的实施意见 | 做优信息服务产品，发展下一代操作系统，推广开源技术；做强未来高端装备，突破人形机器人、量子计算机等产品... |
| 2024 | 工业和信息化部、应急管理部 | 关于加快应急机器人发展的指导意见 | 到 2025 年，要研发一批先进应急机器人，大幅提升科学化、专业化、精细化和智能化水平；建设一批重点场景应急机器人实战测试和示范应用基地，逐步完善发展生态体系... |
| 2023 | 工业和信息化部 | 人形机器人创新发展指导意见 | 打造人形机器人“大脑”和“小脑”、突破“肢体”关键技术、健全全技术创新体系。打造整机产品、夯实基础部组件、推动软件创新。 |
| 2023 | 工业和信息化部、教育部等 | “机器人+”应用行动实施方案 | 聚焦 10 大应用重点领域，突破 100 种以上机器人创新应用技术及解决方案，推广 200 个以上具有较高技术水平、创新应用模式和显著应用成效的机器人典型应用场景... |
| 2021 | 工业和信息化部 | “十四五”机器人产业发展规划 | 到 2025 年，机器人产业营业收入年均增速超过 20%；形成一批具有国际竞争力的领军企业及一大批创新能力强、成长性好的专精特新“小巨人”企业，建成 3-5 个有国际影响力的产业集群；制造业机器人密度实现翻番... |
| 2021 | 工业和信息化部等八部门 | “十四五”智能制造发展规划 | 到 2025 年，规模以上制造业企业大部分实现数字化网络化，重点行业骨干企业初步应用智能化；到 2035 年，规模以上制造业企业全面普及数字化网络化，重点行业骨干企业基本实现智能化... |
| 2021 | 工信部、国家卫生健康委 | 健康养老产业发展行动计划（2021-2025 年） | 推进物联网、大数据、云计算、人工智能、区块链等新一代信息技术以及移动终端、可穿戴设备、服务机器人等智能设备在居家、社区、机构等养老场景集成应用... |

资料来源：CMR 人形机器人联合体微信公众号，HTI

**表 2 2021-2024 年各省市人形机器人相关政策/计划**

| 时间 | 省市 | 政策/计划 | 相关内容摘要 |
|---|---|---|---|
| 2023 | 北京市 | 北京市机器人产业创新发展行动方案（2023-2025 年） | 加紧布局人形机器人，对标国际领先人形机器人产品，支持企业和高校院所开展人形机器人整机产品、关键零部件攻关和工程化，加快建设北京市人形机器人产业创新中心... |
| 2023 | 北京市 | 北京经济技术开发区机器人产业高质量发展三年行动计划（2023-2025 年） | 到 2025 年，机器人研发投入年复合增长率达 50%以上，搭建 50 个机器人应用场景示范项目，规上工业企业机器人密度达到 360 台/万人，产值规模达到 100 亿元... |
| 2023 | 北京市 | 北京市促进机器人产业创新发展的若干措施 | 由机器人骨干企业牵头，整合国内外一流创新资源，组建人形机器人创新中心，开展关键共性技术研究。支持机器人企业与"智能机器人与系统高精尖创新中心"联合开展产业化攻关... |
| 2023 | 上海市 | 上海市推动制造业高质量发展三年行动计划（2023-2025 年） | 瞄准人工智能技术前沿，构建通用大模型，面向垂直领域发展产业生态，建设国际算法创新基地，加快人形机器人创新发展... |
| 2023 | 上海市 | 上海市建设具有全球影响力的科技创新中心"十四五"规划 | 研发高端精密减速器、控制器、伺服电机等基础部件，突破机器人轻量化设计、多轴驱控一体化、信息感知与导航、机器人操作系统、人机交互与自主编程等共性关键技术... |
| 2023 | 上海市 | 上海市促进智能机器人产业高质量创新发展行动方案（2023-2025 年） | 到 2025 年，打造具有全球影响力的机器人产业创新高地；促进三个突破，在品牌、应用场景和产业规模方面实现"十百千"突破；建设三个公共服务平台... |
| 2022 | 广东省 | 广东省新一代人工智能创新发展行动计划（2022-2025 年） | 支持在机器学习自动化、大数据智能、通用基础模型、无监督跨模态大模型、人机混合群体智能、知识理解与推理、协同控制与优化决策、可解释人工智能等领域开展技术攻关... |
| 2021 | 广东省 | 广东省培育智能机器人战略性新兴产业集群行动计划（2021—2025 年） | 到 2025 年，智能机器人产业营业收入达到 800 亿元，其中服务机器人行业营业收入达到 200 亿元，无人机（船）行业营业收入达到 500 亿元，工业机器人年产量超过 10 万台... |
| 2023 | 广东省 | 深圳市加快推动人工智能高质量发展水平应用行动方案（2023-2024 年） | 聚焦通用大模型、智能算力芯片、智能传感器、智能机器人、智能网联汽车等领域，实施人工智能科技重大专项扶持计划，重点支持基于国内外芯片和算法的开源通用大模型... |
| 2022 | 广东省 | 深圳市人民政府关于发展壮大战略性新兴产业集群和培育发展未来产业的意见 | 重点发展工业机器人、服务机器人、特种机器人、无人机（船）等领域，突破减速器、控制器、伺服系统等关键零部件和集成应用技术，扩展智能机器人在电子信息制造、汽车、航空航天等高端制造应用场景... |
| 2024 | 广东省 | 东莞市支持智能机器人产业发展若干措施 | 抢抓人形机器人发展机遇。立足特色和产业优势，通过降低门槛，提高资助比例和资助额度等方式给予倾斜性政策扶持，招引和培育人形机器人企业，促进产业汇聚发展... |
| 2023 | 广东省 | 佛山市机器人及相关产业发展规划（2023-2030 年） | 至 2025 年，佛山机器人及相关产业营收从 515 亿元增长到 1000 亿元，用三年时间实现倍增。至 2030 年，机器人及相关产业营收从 1000 亿元增长到 2000 亿元... |
| 2024 | 江苏省 | 江苏省机器人产业创新发展行动方案 | 到 2025 年，我省机器人产业链规模达 2000 亿元左右，机器人核心产业规模达到 250 亿元以上，成为全国机器人产业创新发展和集成应用高地；到 2027 年，我省机器人产业综合实力达到国际先进水平... |
| 2023 | 江苏省 | 江苏省关于培育发展未来产业的指导意见 | 谋划布局量子科技、深海深地空天、类人机器人、先进核能等一批前沿性未来产业，初步形成"10+x"未来产业体系... |
| 2021 | 江苏省 | 江苏省"十四五"制造业高质量发展规划 | 大力发展消防应急、智能巡检等特种机器人和手术诊疗、康复养护等服务机器人，进一步提升高性能减速器、高精度伺服驱动系统、先进控制器、新型智能传感器等核心零部件自主可控水平... |
| 2023 | 江苏省 | 苏州市人工智能产业创新集群行动计划（2023-2025 年） | 聚焦人工智能关键核心技术领域，在语音识别、自动驾驶、计算机视觉、自然语言处理、机器人等优势领域加强研发投入，实现核心技术突破... |
| 2023 | 湖北省 | 湖北省数字经济高质量发展若干政策措施 | 鼓励省内企业联合科研院所面向未来产业，开展 6G、量子科技、人形机器人、元宇宙、人工智能等领域原创性研发，对相关企业享受研发费用加计扣除超出上一年度的增量部分给予补助... |
| 2022 | 湖北省 | 湖北省人工智能产业"十四五"发展规划 | 大力发展智能服务机器人，以智能感知、模式识别、智能分析和智能决策为重点，推进教育娱乐、医疗康复、养老陪护等特定应用场景的智能服务机器人研发及产业化... |
| 2022 | 天津市 | 天津市智能制造发展"十四五"规划 | 重点培育一批专业性强、行业特色明显的智能制造系统集成服务商和一批具备整体设计能力和解决方案提供能力的专业化机器人及智能装备系统集成企业，开展自主品牌机器人和智能装备的应用示范和系统集成服务... |
| 2021 | 浙江省 | 浙江省高端装备制造业发展"十四五"规划 | 开展伺服电机、精密减速器、同服驱动器、执行器、传感器、人机物交互系统等机器人关键核心部件工程化攻关。开展整机、部件、集成应用等机器人关键共性技术攻关... |
| 2023 | 浙江省 | 浙江省人民政府办公厅关于培育发展未来产业的指导意见 | 发展仿生机器人。开展仿生感知认知、生机电融合、人工智能视觉导航等技术研究突破与系统集成，强化商用场景和个人、家庭应用场景探索... |
| 2024 | 四川省 | 成都市人民政府关于前瞻培育未来产业构筑高质量发展新动能的实施意见 | 促进算法、算力、数据的融合提升和系统应用，打造数实融合、虚实结合的数字产业新形态，重点培育人形机器人、类脑智能、元宇宙、柔性电子、先进计算及数据服务等细分领域... |
| 2024 | 安徽省 | 安徽省人形机器人产业发展行动计划（2024—2027 年） | 到 2027 年，围绕"23456"目标体系，初步构建安徽省人形机器人创新体系和产业生态，形成产业化能力。到 2030 年，人形机器人产业化进程加速，应用场景更加丰富，相关产品深度融入实体经济，建成国内有重要影响力的人形机器人产业发展高地... |
| 2023 | 河北省 | 河北省支持机器人产业发展若干措施 | 重点在五个方面发力推进机器人产业高质量发展。编制机器人创新应用案例集推广 100 项基于"机器人化"的智能制造和工业互联网创新发展重点项目... |
| 2021 | 福建省 | 福建省"十四五"制造业高质量发展专项规划 | 围绕汽车、机械、电子、轻工、化工和危险品制造等工业机器人特定机器人，以及医疗健康、家庭服务、教育娱乐等服务机器人应用... |
| 2022 | 山东省 | 山东省"十四五"战略性新兴产业发展规划 | 以机器人整机制造为牵引，加快突破高精度减速器、高性能控制器、传感器与末端执行器等关键技术与核心零部件... |
| 2024 | 山东省 | 山东省促进人形机器人产业创新发展实施方案（2024—2027 年） | 以技术突破、产品创新、场景应用、生态培育为重点，山东将加快推进人形机器人自主化、智能化、高端化发展，到 2025 年，人形机器人创新体系初步建立，整机产品实现批量生产，在制造、民生、服务等领域得到示范应用... |
| 2023 | 江西省 | 江西省未来产业发展中长期规划（2023-2035 年） | 以南昌、九江、吉安、赣州、新余等为重点，推动人工智能与机器人技术深度融合，突破机器人系统开发、操作系统等共性技术以及研发仿生感知与认知、生机电融合等前沿技术，构建智能机器人创新生态和发展体系... |
| 2023 | 重庆市 | 重庆市 AI 及服务机器人产业集群高质量发展行动计划（2023—2027 年） | 到 2027 年，全市 AI 及服务机器人产业集群建设取得重要进展，人工智能算力显著增强，服务机器人领域 AI 技术研发能力和应用深度走在全国前列... |

资料来源：CMR 人形机器人联合体微信公众号，安徽省工业和信息化厅，山东省工业和信息化厅，山东省人民政府，HTI

**APPENDIX 1**

**Summary**

**Investment Highlights:**

Policy Support Chongqing focuses on developing humanoid and medical robots. By 2027, it aims to create ‘robot+’ application scenarios, especially in manufacturing, agriculture, smart construction, public services, and emergency sectors. Measures include key technology breakthroughs, high-end product development, and building a ‘robot+’ ecosystem. Dynamic Developments XPeng AI robot Iron debuted, featuring humanoid design, 178cm height, 70kg weight, and 62 active degrees of freedom. It uses XPeng Turing AI chip for autonomous reasoning and AIOS for smooth dialogue. Iron is now working in XPeng’s factory. China’s first ultra-light humanoid robot, Konka-1, launched, weighing 25kg with an 8-hour battery life. It sets records in weight and load capacity. SE01, a full-size humanoid robot by Siasun Robot&Automation, features 32 degrees of freedom, dual processors, and advanced visual systems. Investment Advice: November humanoid robot targets include Zhejiang Sanhua Intelligent Controls, Keli Sensing Technology (Ningbo), Leaderdrive, Jiangsu Hengli Hydraulic, Ubtech Robotics Corp Ltd, Shenzhen Zhaowei Machinery & Electronics Co., Ltd., Shenzhen Inovance Technology, Veichi, Wuxi Best Precision Machinery, Shanghai Suochen Information Technology Co.,Ltd.

Risk Warning: Humanoid robot industrialization and policy support may be weaker than expected.

## 附录 APPENDIX

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**评级分布 Rating Distribution**

**优于大市**，未来 12-18 个月内预期相对基准指数涨幅在 10%以上，基准定义如下

**中性**，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

**弱于大市**，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

各地股票基准指数：日本 – TOPIX, 韩国 – KOSPI, 台湾 – TAIEX, 印度 – Nifty100, 美国 – SP500; 其他所有中国概念股 – MSCI China.

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**Analyst Stock Ratings**

**Outperform:** The stock's total return over the next 12-18 months is expected to exceed the return of its relevant broad market benchmark, as indicated below.

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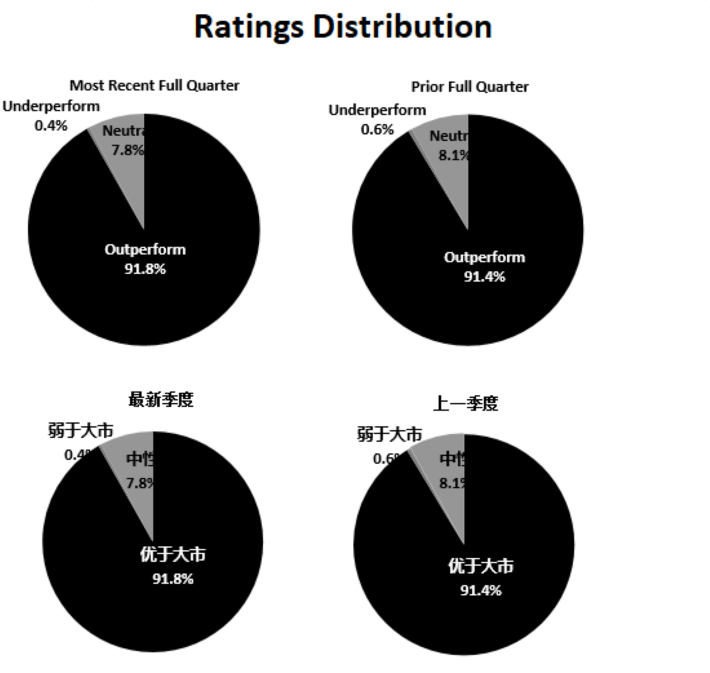


**截至 2024 年 9 月 30 日海通国际股票研究评级分布**

| | 优于大市 | 中性<br>(持有) | 弱于大市 |
|---|---|---|---|
| 海通国际股票研究覆盖率 | 91.8% | 7.8% | 0.4% |
| 投资银行客户* | 3.5% | 4.4% | 0.0% |

*在每个评级类别里投资银行客户所占的百分比。

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中性，未来 12-18 个月内预期相对基准指数变化不大，基准定义如下。根据 FINRA/NYSE 的评级分布规则，我们会将中性评级划入持有这一类别。

卖出，未来 12-18 个月内预期相对基准指数跌幅在 10%以上，基准定义如下

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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| | Outperform | Neutral<br>(hold) | Underperform |
|---|---|---|---|
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*Percentage of investment banking clients in each rating category.

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**SELL:** The stock's total return over the next 12-18 months is expected to be below the return of its relevant broad market benchmark, as indicated below.

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