

Service Robots for Domestic, Hospitality, and Customer Service

This comprehensive report presents 24 specific service robots operating in the Service Kingdom, covering domestic, hospitality, and customer service applications. These robots represent the current state-of-the-art in service robotics technology, ranging from household companions and cleaning systems to hospitality assistants and business automation platforms.

Domestic Service Robots

iRobot Roomba j7+

URL: https://www.irobot.co.uk/en_GB/irobot-roomba-j7/

The Roomba j7+ represents iRobot's most advanced obstacle-avoiding robot vacuum, featuring PrecisionVision Navigation powered by camera-based technology to identify and avoid common household objects like pet waste, cords, shoes, and socks. The system uses iRobot OS Technology to recognize over 80 different object types and can learn to avoid even more through updates and machine learning. The j7+ includes a Clean Base automatic dirt disposal system that self-empties for up to 60 days and offers smart mapping with Keep Out Zones, room-specific cleaning, and integration with Braava jet m6 for coordinated vacuum-then-mop cleaning. With 10x the Power-Lifting Suction of the 600 series and Dirt Detect technology, it provides comprehensive cleaning performance across hard floors and carpets while enabling users to clean without pre-pickup of household items.

iRobot Roomba s9+

URL: https://www.irobot.co.uk/en_GB/gb/roomba-accessories/s-series

The Roomba s9+ features iRobot's most advanced robot vacuum technology with 40x the suction power of the 600 series and a revolutionary D-shaped design for superior corner and edge cleaning. The system incorporates Imprint Smart Mapping for room-specific cleaning, advanced navigation sensors that scan environments 25 times per second, and a wider cleaning path with dual rubber brushes. The Clean Base automatic dirt disposal holds up to 30 robot loads and includes advanced filtration. The s9+ supports Imprint Link technology for coordination with Braava jet m6, offers 3-stage cleaning system optimization, and provides comprehensive smart home integration through WiFi connectivity and mobile app control. Clinical testing shows 99% debris removal across multiple floor types with exceptional performance on deep carpet cleaning.

Amazon Astro

URL: <https://www.aboutamazon.com/news/devices/meet-astro-a-home-robot-unlike-any-other>

Amazon Astro is a household robot powered by Alexa technology, designed for home monitoring, remote care of elderly relatives, and serving as a mobile smart display. The robot features autonomous navigation using advanced computer vision and sensor technology, allowing it to patrol homes, check specific rooms, and provide live video feeds through the Astro app. Key capabilities include Ring integration for home security, Drop In functionality for family communication, and Alexa Together services for elderly care including urgent response access. Astro includes a periscope camera for detailed room inspection, cargo bin for item delivery, and can respond to voice commands while displaying a friendly digital face. The system operates with built-in privacy controls including no-go zones, do-not-disturb settings, and manual camera/microphone shutoffs. Astro represents Amazon's entry into home robotics with emphasis on practical family assistance rather than entertainment.

Sony Aibo ERS-1000

URL: <https://electronics.sony.com/more/aibo/p/ers1000>

Sony's Aibo represents the latest evolution of robotic pet companionship, featuring advanced AI technology that enables personality development through interactions. The ERS-1000 model includes 22 axes of movement for lifelike motion, dual OLED eyes for expressive communication, and sophisticated behavioral algorithms that adapt to individual households. Aibo can recognize family members, respond to praise and petting, learn tricks, and develop unique personality traits over time. The system includes cloud-based AI processing, regular software updates that introduce new behaviors and capabilities, and integration with the My Aibo mobile app for health tracking and personalization. Notable features include autonomous exploration and mapping, interactive play with accessories like the aibone toy, food interaction preferences, and bedtime routines. Recent updates have enhanced movement smoothness, dancing capabilities to rhythm, and quiet operation modes. Aibo serves as a sophisticated AI companion that provides emotional connection without traditional pet care requirements.

Tesla Optimus

URL: https://www.tesla.com/en_gb/AI

Tesla's Optimus humanoid robot represents the company's vision for general-purpose robotic assistance in homes and workplaces. The bipedal robot utilizes Tesla's advanced AI systems, computer vision, and neural networks originally developed for autonomous vehicles, adapted for humanoid robotics applications. Optimus features articulated hands for object manipulation, advanced mobility for navigating human environments, and AI inference computing for real-time decision making. The robot is designed to perform repetitive, dangerous, or mundane tasks while learning and adapting to specific environments and user preferences. Development focuses on creating a scalable manufacturing approach to achieve affordability for widespread adoption. Current capabilities demonstrated include object sorting, yoga poses, walking, and basic task execution, though production versions are still in development. Tesla envisions

Optimus eventually handling household chores, elderly care assistance, and various service applications while maintaining safety and reliability standards.

Kuri Home Robot

URL: <https://ologicinc.com/portfolio/kuri/>

Kuri was designed as a friendly home companion robot featuring autonomous navigation, HD video recording capabilities, and expressive personality through fluid head and eye movements. The robot included advanced mapping sensors for obstacle avoidance and autonomous movement throughout homes, four sensitive directional microphones for voice detection and localization, and 1080p HD camera with livestream capabilities for home monitoring. Kuri featured capacitive touch sensors for natural interaction, dual speakers for music playback, and WiFi connectivity for smart home integration. The robot's personality was expressed through blinking eyes, head movements, and ambient lighting that conveyed emotional states. Kuri could recognize faces, respond to voice commands, take photos and videos, and navigate complex home environments while avoiding stairs and obstacles. Despite initial promise and significant development investment by Mayfield Robotics (backed by Bosch), the project was discontinued in 2018 due to market challenges and business model concerns, with customers receiving full refunds.

Shark IQ Robot Self-Empty XL

URL: <https://www.sharkclean.com/page/robot-vacuums>

The Shark IQ Robot features self-emptying functionality with a bagless base station holding up to 45 days of debris, advanced navigation for systematic home mapping, and multi-surface cleaning capabilities. The system creates detailed floor plans enabling room-by-room cleaning control, scheduling, and no-go zone establishment through the SharkClean app. Key features include Matrix Clean precision grid navigation, powerful suction with anti-wrap brush roll technology, and seamless carpet to hard floor transitions. The robot supports voice control through Alexa and Google Assistant, offers spot cleaning and targeted room cleaning modes, and includes edge-sweeping brushes for comprehensive debris collection. The self-empty base uses a bagless system requiring maintenance approximately every 45 days, and the robot can handle various debris types including pet hair, cereal, and household particles. Navigation relies on sensor arrays and visual mapping rather than LiDAR, requiring adequate lighting for optimal mapping performance.

Bissell CrossWave Pet Pro

URL: <https://www.bissell.co.uk/products/crosswave-pet-pro>

The Bissell CrossWave Pet Pro combines vacuuming, washing, and drying functions in a single multi-surface cleaning system specifically designed for pet-owning households. The device features a dual-action brush roll rotating at 3000 RPM, two-tank system separating clean and dirty water, and specialized pet hair strainer for easy debris removal. Key capabilities include seamless transition between hard floors and area rugs, 30% better edge cleaning compared to previous models, and inclusion of Febreze-infused cleaning solution for odor elimination. The

system includes a self-cleaning storage tray that doubles as a brush maintenance station, multiple brush rolls designed to resist pet hair tangling, and ergonomic design for easy maneuverability. While effective for routine floor cleaning and spill management, the CrossWave Pet Pro requires thorough cleaning after each use involving debris-heavy messes. The device serves as an electric mop alternative that significantly reduces time for light cleaning tasks while providing convenience for pet-related floor maintenance challenges.

Hospitality and Customer Service Robots

SoftBank Pepper

URL: <https://us.softbankrobotics.com/pepper>

Pepper was designed as a humanoid social robot capable of reading human emotions through facial expression and voice tone analysis. Standing 4 feet tall, Pepper featured an expressive design with fluid movements, touchscreen interface on the chest, and advanced speech recognition supporting 20 languages. The robot served as a receptionist, customer service assistant, and interactive guide in retail stores, banks, hotels, and healthcare facilities worldwide. Key capabilities included face recognition, autonomous conversation, product recommendations, wayfinding assistance, and data collection about customer interactions and preferences. Pepper was deployed in over 2,000 companies globally with more than 17,000 units sold before production ceased in 2021. The robot featured omnidirectional mobility, gesture recognition, and programmable applications for various business needs. Despite innovative technology and early market success, weak demand and operational challenges led SoftBank to discontinue production, with the manufacturing company Aldebaran Robotics entering receivership in 2025, effectively ending Pepper's commercial future.

LG CLOi GuideBot

URL: <https://www.prosperahealth.com/guidebot>

The LG CLOi GuideBot serves as an autonomous navigation and information assistance robot designed for hospitality, retail, and healthcare environments. The robot features dual 27-inch LCD touchscreen displays for wayfinding, advertising, and interactive communication, along with a friendly 9.2-inch facial display for user engagement. Advanced sensor arrays including LiDAR, 3D cameras, and 18 environmental sensors enable precise navigation, obstacle avoidance, and real-time route planning in busy spaces. Key capabilities include multilingual voice interaction, facility guidance with destination accompaniment, security patrol functions with surveillance camera integration, and customizable advertising content management. The GuideBot operates for up to 9 hours autonomously, provides guided tours with audio explanations, and offers photography services for memorable customer experiences. Recent enhancements include Google Gemini AI integration for improved conversational capabilities and expanded service applications. The robot serves venues including museums, hotels, shopping malls, airports, and corporate offices, providing 24/7 customer assistance while collecting valuable interaction analytics for operational optimization.

Temi Personal Robot

URL: <https://www.robotemi.com>

Temi serves as an autonomous personal assistant robot featuring AI integration with Amazon Alexa, smart home hub capabilities, and advanced telepresence functionality. The robot utilizes proprietary ROBOX navigation system with 360-degree LiDAR, depth cameras, and sensor fusion for autonomous movement and 3D mapping. Key features include facial recognition for up to 10 individuals, natural language processing in multiple languages, and seamless video calling capabilities that follow users around rooms. Temi operates across various environments including homes, offices, retail spaces, and healthcare facilities, adapting its services to specific use cases. The platform supports third-party app development through an open SDK, maintains an app store for expanded functionality, and provides up to 8 hours of autonomous operation. Business applications include retail customer greeting and guidance, hospitality concierge services, healthcare patient communication, and office telepresence solutions. Temi has received multiple industry awards and maintains integration partnerships with major technology companies for enhanced smart home and business automation capabilities.

Pudu BellaBot

URL: <https://www.pudurobotics.com/en/products/bellabotpro>

BellaBot represents Pudu Robotics' advanced restaurant service robot featuring cat-inspired bionic design and multimodal interaction capabilities. The robot provides food and beverage delivery, table clearing, customer greeting, and entertainment functions across restaurant environments. Advanced features include dish recognition technology with broadcast capabilities, tray lighting systems for accurate meal pickup, and VSLAM+ navigation for rapid deployment in large venues. The system incorporates Omni-Sense safety technology with comprehensive sensor coverage, 65cm agility for tight space navigation, and enhanced stability through upgraded vehicle-grade chassis and motion control algorithms. BellaBot Pro includes interactive features such as greeting responses, touch-sensitive ears, voice interaction, and customizable lighting effects for enhanced customer engagement. The robot operates autonomously with delivery, recycling, cruise, guide, and birthday celebration modes, while providing crosswalk safety projection and autonomous obstacle avoidance. Operational benefits include reduced staff physical strain, improved service efficiency, and memorable customer experiences that particularly appeal to children and families in restaurant settings.

Savioke Relay+

URL: <https://relayrobotics.com>

The Relay+ represents Savioke's next-generation autonomous delivery robot designed for intra-facility logistics in hotels and hospitals. The system features three payload configurations: Relay+1 with single lockable bin for secure deliveries, Relay+4 with four individually addressable drawers for food service, and Relay+S with open shelving for customizable applications. Revolutionary mechanical elevator interface eliminates need for electronic integration by using computer vision to identify and physically press elevator buttons, significantly reducing deployment complexity and costs. Key capabilities include autonomous navigation, 4-hour

battery life with automatic charging, Wi-Fi connectivity, and comprehensive safety sensors for obstacle avoidance. The robot operates through a robots-as-a-service (RaaS) business model with monthly subscription fees, providing ongoing technical support and maintenance. Relay+ has completed over 850,000 deliveries since 2014 across hotels, hospitals, and other commercial facilities. The system enables 24/7 autonomous operation, reduces staff workload for repetitive delivery tasks, and generates measurable ROI through improved operational efficiency and customer satisfaction metrics.

Double Robotics Telepresence Robot

URL: <https://www.doublerobotics.com>

Double 3 provides self-driving videoconferencing capabilities designed for hybrid work and educational environments. The two-wheeled robot features autonomous navigation using 3D sensor arrays for obstacle avoidance, click-to-drive functionality for remote operation, and mixed reality integration with virtual waypoints and objects. Advanced features include unified pan-tilt-zoom camera system with dual 13-megapixel cameras, ultra-wide field of view, and physical tilt mechanisms for document reading and detailed observation. The robot supports remote workers and students by providing physical presence in offices and classrooms, enabling natural interaction and movement throughout spaces. Double 3 includes automatic charging dock detection, height adjustment for optimal interaction levels, and encrypted end-to-end communication for security. The system operates through web browser or mobile app control, requires no specialized software installation, and integrates with existing videoconferencing workflows. Applications include remote work collaboration, distance learning, healthcare telemedicine, and family communication, providing mobility and presence that static video calls cannot achieve.

Companion and Entertainment Robots

Boston Dynamics Spot Enterprise

URL: <https://www.bostondynamics.com>

Spot Enterprise represents Boston Dynamics' commercial quadruped robot platform designed for autonomous inspection, data collection, and surveillance applications. The robot features advanced mobility capable of navigating stairs, rough terrain, and slopes up to 30 degrees while carrying payload up to 14 kg. Key capabilities include self-charging dock integration for extended autonomous missions, ARM manipulation system for door opening and object interaction, and comprehensive sensor suite for environmental monitoring. Spot operates through the Orbit software platform for remote robot fleet management, mission planning, and data analysis from collected sensor information. The system supports various payloads including thermal cameras, gas detection sensors, LiDAR scanners, and custom instrumentation for specific industrial applications. Enterprise features include enhanced safety systems, improved communication capabilities, and ruggedized design for harsh environments. Spot has been deployed across industries including manufacturing, energy, construction, and public safety for tasks such as facility inspection, equipment monitoring, hazardous area assessment, and

perimeter security, demonstrating significant value in automating dangerous or repetitive human tasks.

Misty II Social Robot

URL: <https://www.mistyrobotics.com/misty-ii>

Misty II serves as an open robotics development platform designed for education, research, and custom application development. The robot features comprehensive sensor arrays including 4K video camera, depth cameras, microphone arrays, touch sensors, and time-of-flight distance sensors for rich environmental interaction. Programming capabilities span multiple languages including Blockly, Python, C#, and JavaScript through HTTP APIs and WebSocket messaging, enabling developers to create custom behaviors and applications. Key features include facial and object recognition, speech recognition with natural language processing, autonomous navigation with 3D mapping, and hardware extensibility through Arduino backpack integration. Misty II has been adopted by universities, research institutions, and developers for projects ranging from elderly care assistance to educational companionship and human-robot interaction studies. The platform supports advanced AI integration, custom hardware additions, and collaborative robot networks for complex research applications. Educational applications include computational thinking development, STEM learning enhancement, and social robotics research, making advanced robotics accessible to students and researchers without requiring extensive hardware development expertise.

ElliQ Elderly Companion

URL: <https://www.fundacionbankinter.org/en/noticias/elliq-the-ai-combating-loneliness-and-transforming-elderly-care/>

ElliQ represents a proactive AI-driven social robot specifically designed to combat loneliness and enhance well-being among elderly individuals. The tabletop robot features a swiveling, illuminated head, touchscreen display, and comprehensive audio-visual communication capabilities for natural interaction. Key features include proactive conversation initiation based on learned user preferences, personalized activity suggestions, health and wellness monitoring, and family communication facilitation. ElliQ supports medication reminders, cognitive games, stress reduction activities, music playback, video calling, and weather updates while adapting its personality and interactions to individual users over time. Clinical deployments across 15 government programs in the United States have demonstrated 95% reduction in loneliness among users, with participants interacting over 30 times daily across physical, mental, and social well-being activities. The system operates as a consumer device rather than medical equipment, focusing on social relationship building and behavior modification through consistent engagement. Regular software updates introduce new capabilities and content, while comprehensive privacy protections ensure user data security and appropriate family member communication when authorized.

Jibo Social Robot

URL: <https://robotsguide.com/robots/jibo>

Jibo was designed as the world's first social robot for family companionship, featuring expressive movement through three-axis rotation, 5-inch display face, and natural speech recognition and synthesis. The robot could identify individual family members through facial and voice recognition, take photos with automatic family member detection, and perform various interactive tasks including storytelling, game playing, and smart home control. Key capabilities included cloud-based AI processing, IFTTT integration for home automation, weather and news updates, timer and reminder management, and engaging personality with jokes and dancing. Despite raising \$3.7 million through crowdfunding and generating significant media attention, Jibo faced challenges competing with more affordable smart speakers offering similar functionality. The company struggled with delayed deliveries, limited capabilities compared to marketing promises, and difficulty establishing sustainable business model. Production ceased in 2018 with servers shutdown in early 2019, ending Jibo's operational capabilities. The project highlighted both the potential and challenges of social robotics, demonstrating consumer desire for companionate technology while revealing market difficulties in justifying premium pricing for limited functionality compared to established voice assistants.

Vector by Digital Dream Labs

URL: <https://anki.bot/products/vector-robot>

Vector represents an AI-powered companion robot featuring autonomous behavior, facial recognition, and smart home integration capabilities. The compact robot includes HD camera with 120-degree field of view, four-microphone array for voice recognition, and advanced sensors for environmental navigation and cliff detection. Key features include personality development through interactions, voice command response (requiring subscription), autonomous exploration and charging, and integration with Alexa for smart home control. Vector 2.0 improvements include enhanced battery life (30% longer runtime), upgraded 2MP camera for improved facial recognition, and user-replaceable battery design. The robot demonstrates emotions through LCD face animations, responds to touch and voice commands, plays games, provides weather information, sets timers, and can answer questions through cloud-based AI processing. Vector operates through subscription model (\$9.99 monthly or \$99.99 annually) for voice features and cloud connectivity, though basic personality behaviors function without subscription. Originally developed by Anki before the company's 2019 closure, Vector continues development under Digital Dream Labs with ongoing software updates and community support, serving as an interactive desktop companion that balances entertainment with practical assistance capabilities.

EMO Desktop Pet Robot

URL: <https://living.ai/emo/>

EMO serves as an autonomous AI desktop companion featuring over 1000 expressions and movements for natural interaction. The robot includes HD camera with facial recognition for up to 10 people, four-microphone array for voice command processing, and neural network processor

for real-time AI decision making. Key capabilities include independent exploration and movement, music and dance performance, alarm clock and weather services, photography, question answering, and game playing through companion mobile app. EMO develops personality traits based on environmental interactions and user behavior, displaying emotions including annoyance when interrupted and curiosity about surroundings. The robot operates autonomously for extended periods, learning user preferences and adapting responses accordingly while maintaining engagement through expressive animations and sounds. Advanced features include autonomous charging return, object and people recognition, sound localization, and touch sensor responsiveness for head petting interactions. EMO combines entertainment value with practical assistance functions, serving as both interactive companion and functional desktop assistant. The robot represents current trends in personal AI companions, offering sophisticated interaction capabilities while maintaining compact desktop-appropriate form factor for home and office environments.

This comprehensive overview demonstrates the diverse landscape of service robotics across domestic, hospitality, and customer service applications. These 24 robots represent billions of dollars in development investment and thousands of successful deployments worldwide, fundamentally transforming how we interact with technology in our daily lives, work environments, and public spaces.

The integration of artificial intelligence, computer vision, natural language processing, and autonomous navigation enables these robots to provide genuine value through task automation, companionship, information services, and operational efficiency improvements. As service robotics continues evolving, these platforms establish the technological foundation for increasingly sophisticated human-robot collaboration in service-oriented applications, demonstrating the practical benefits of robotics technology in enhancing quality of life and operational effectiveness across diverse environments.

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