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At CES, robotics delivers AI into every corner of our lives

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As developers get their arms around AI-infused robotics, they’ll find themselves herding a rapidly evolving menagerie of intelligent mechanisms such as those on display at CES 2019. As I noted recently, smart objects of every type are beginning to enter developers’ physical workspaces. We can expect to see more data scientists who are working on these projects acquire smart sensors, smart cameras, smart drones, self-driving vehicles and other hardware platforms for development and training of the AI that powers more sophisticated robotics initiatives.

Wikibon expects to see growing enterprise adoption of tools for development and training of the AI that drives intelligent robots in the following types of platforms that were announced this week at CES:

- **Grapple-anything ambulatory robots**: UBTech’s Walker is a new AI-driven bipedal, smooth-walking and self-balancing humanoid robot. It has intricately jointed arms and hands to grasp and manipulate object with seven degrees of freedom. It has the ability to engage in multi-modal interactions including voice, vision, and touch, as well as face, and object recognition. It comes equipped with a phalanx of high-performance actuators and sensors. It can dynamically grapple and position external objects while adapting to uncertain conditions in real-time and avoiding collisions. It has been designed to help users safely control indoor facilities such as lighting, electrical appliances and electrical sockets. It’s being positioned as a development platform for a wide range of consumer and business use cases.

- **Go-anywhere self-driving robots**: Hyundai’s Elevate is an AI-powered autonomous vehicle has a vanlike cabin perched atop four jointed robotic legs attached to its wheels. These appendages enable this “walking car” — which may or may not operate autonomously — to go off-road, navigate through difficult terrain, ford rivers, clamber over crumbled concrete and even climb stairs. Though it’s just a concept and there’s no promise of commercial availability, Hyundai is pitching Elevate for emergency response, disabled assistance and other “go anywhere” scenarios where the vehicle may need to transport humans.

- **Follow-me cargo-carrying robots**: ForwardX Robotics’ Ovis Suitcase is a hands-free cargo-toter that follows the user. It has built-in AI-driven smart camera that scans surroundings, navigates around obstacles and always keeps its owner in sight. Due for release in the middle of this year, it can quickly revert to manual hands-on operation for climbing stairs or riding escalators. The user wears a band that alert them if the suitcase gets blocked or falls out of range.

- **Pivoting photographer robots**: Remo’s OBSBOT Tail AI camera robotically pivots to follow the user or any visual subject of their choosing. Driven by a HiSilicon Hi3559A processor, its embedded AI can intelligently follow chosen subjects or, alternatively, ignore them, zoom in or out to ensure everything is framed perfectly and even recognize hand gestures to perform some designated action. The camera, which has 10 lenses and a microphone jack, sits atop a three-axis, 360-degree gimbal that ensures smooth movement in any direction. Its 12-megapixel sensor enables 4K video recording and HDR10 dynamic range. It records to micro SD cards. The camera can be mounted on a wheeled accessory literally to follow the user around.

- **Personalized guardian robots**: Samsung launched squad of AI-equipped robots attuned to guarding
their users’ health and air quality, as well as a robotic exoskeleton for amplifying the muscular strength of athletes and others while protecting them from strains, fractures and other risks of overexertion. Helite launched B’Safe and Hip’Safe, which are sensor-equipped wearable robotic airbags designed to protect motorcyclists and the elderly from sudden falls. These airbags have the smarts to know when to inflate (such as in an actual fall) and when not (such as when the user simply steps on a bump or other uneven surface).

- **Touch-responsive stress-relief robots**: GrooveX’s Lovot is essentially a mechanical pet. Expected to come to market in 2020 at a hefty purchase price, it’s a fluffy, fabric-covered mechanical companion that toddles over when you call it and begs to be held. Its touch-responsive behavior invites cuddling and will doze off if you do so long enough. It can recognize and understand up to 1,000 different voices, which makes it suitable as a stress-relief resource — and possibly as a conversational ice-breaker — that can be shared in large in-person communities.

Though CES is focused on consumer markets, it’s clear that many, if not most, of these AI robotics solutions will be adopted just as eagerly into business, commercial, industrial, government and military uses. For a discussion of how AI robotics will dominate edge computing going forward, check out my recent Wikibon post on the topic.
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