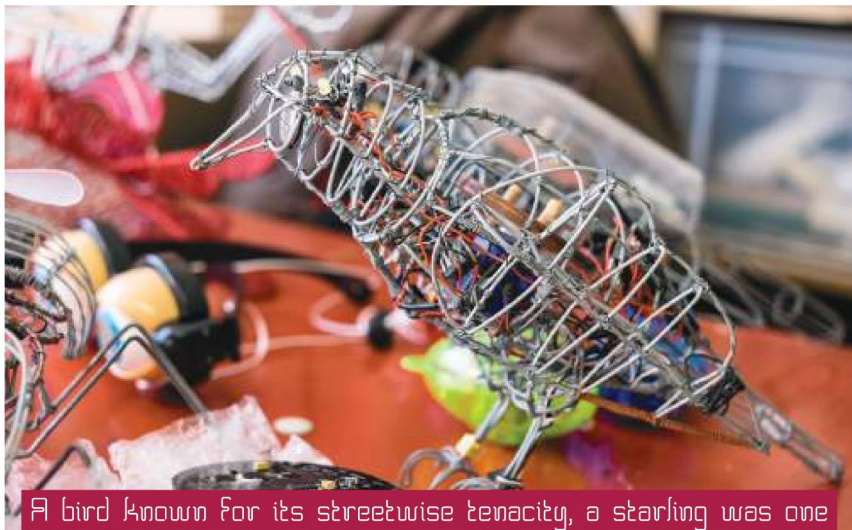


# WIRED

Forget high-tech AI, **Andrew Thompson** steps into a workshop where robot creatures are being made the extra old-fashioned way →



A bird known for its streetwise tenacity, a starling was one of his first wire robot creations

In Ralph Borland's cluttered Woodstock studio, a motley crew of wire-art critters is slowly coming to life.

Ralph lowers the volume of the tinny techno echoing from his computer and, like some dark overlord, picks up a fierce-looking wire army ant between his two fingers. It's about the size of a fat guinea pig, sans fur, with a sturdy wire skeleton keeping innards of electrical wires, chipsets, LED lights, and plastic toy parts from spilling out.

He flicks a switch hidden on its exterior and the ant squirms to life. He watches the movement with an almost morbid look of satisfaction, before placing the struggling creature on the studio floor to shuffle off into a workbench leg centimetres away.

Satisfied with the performance, Ralph picks up the flailing creature, its whining mechanisms competing with the background techno. He flicks the switch, returning it to sleep state, and places it alongside the other stationary bots.

Among them is a futuristic wire owl. When a proximity sensor on its chest is covered, its Furby-like eyes pop open with a mechanical *clunk*, and then glow red. There are also a few small birds crammed full of computer chips, electrical wires, old iPod shuffles, and cellphone parts. And another large insect – maybe a termite – with a whirly fan and LED lights on its back. It has touch-sensitive feelers that activate a rainbow of lights whenever they make contact with a foreign object. →





They use basic electronics – the kind you'll find in old Nokia cellphones and mass-produced battery-operated toys



Overseeing the entire scene from a wooden perch on the wall above Ralph's desk is a bird seemingly disinterested in mingling with the common bots below. It's a starling, Ralph tells me, a bird known for its streetwise tenacity, and also one of his first wire robot creations. 'I thought that as a clever urban bird, the starling would make a perfect robot,' he says, explaining that there's a cultural history of mechanical birds that he wanted to tap into.

His fingers run along the perch to find a red detonator-like button, which he pushes to bring the life-size wire artwork to life. The sound of mashing gears and

distorted repetitive chirps fills the studio as it raises and lowers its wings repetitively, its red LED eyes – fixed to a bottle top inside its skull – are glowing menacingly...

The idea to make wire robot animals using basic electronics – the kind you'll find in old Nokia cellphones and mass-produced battery-operated toys – first came to Ralph while he was wandering through the organised chaos on the deck above Cape Town's train station a few years ago. 'I went up on the deck, and between the fast-food stands and hairdo places, there were little stalls where people repair cellphones.' →



It struck Ralph that there might be a way of hybridising the electronic parts these guys were using with the wire artworks the street artists were doing.

Ralph was also fascinated by the almost viral nature of street wire art – how within days of a popular film like *Finding Nemo* hitting the circuit, there'd be artists selling wire clown fish at intersections across the country.

He figured if he could combine basic electronics from old cellphones and other found gadgets and toys with more traditional wire art, he could launch a new breed of African robots across the country.

Ralph commissioned wire artists to build the basic wire frames that would accommodate the electronics that would

form the guts of his animals. They created wire prototypes using basic sketches and Plasticine castings, and then fitted them with generic computer chips that would bring them to life.

Although Ralph has since refined the process and incorporated a custom-built chip, he still loves the beauty in their simplicity. 'I specifically wanted them not to look like a western hobbyist's project, but more like something that could've assembled itself on the street.'

The new custom chip means the robots have more power and greater capabilities. He uses what he calls 'toy hacking' to collect relay switches, little fans, lights, speakers and movement mechanisms from the gadgets he plunders.

'There's something rewarding about these African objects eating and incorporating these foreign elements,' says Ralph. 'The artists working on them also find it pretty empowering to take Chinese toys, strip them, and build their own, original creatures around them. Usually what they see is Chinese goods flooding our markets.'

Ultimately, it doesn't matter that Ralph's startling will never learn to fly like a drone, or that his army ant can't make its way around the table leg. What's important is the response these rudimentary robots elicit from people who encounter them. 'It doesn't matter that what's driving them is quite simple,' he says. 'It's that you laugh and you feel affection towards them.' ■

Pictures: Andrew Thompson, supplied

## THE OTHER BOTS

*Looking for a robot that'll do more than make you smile? Dubai has introduced robotic cops and Hanson Robotics has produced 'Sophia' who performs surprisingly well in interviews. And then there are these...*

**ASIMO.** This was one of the first androids to delight the world with its startling human-like ability. This waist-high humanoid robot was crammed full of sensors that enable it to scale and descend stairs, pick up objects, break into a sedate jog, and even respond to voice commands. First created in 2000, Honda stopped production last year.

**SpotMini.** This small dog-like robot can trot over pretty much any terrain without a problem, and even pick itself up if it happens to topple over.



All of this makes it a pretty neat bot for search and rescue missions – its intended purpose – though it's unlikely that the sight of this threading its way through the undergrowth will be particularly comforting. [bostondynamics.com](http://bostondynamics.com)

**YO2D2.** Your next hotel check-in, or room-service delivery, might not require awkward small talk or uncomfortable tipping decisions. That's because robotic butlers like YO2D2 are springing up at hotels around the world. These functional robots greet arriving guests, deliver items to rooms, and even hang out with guests at hotel bars, in case they weren't already feel alienated enough. [saviok.com](http://saviok.com)

**RealBotix.** If there's one thing *Westworld* has taught us, it's that robots will do *anything* they're programmed to, including taking care of the deepest human fantasies. Folks at RealBotix are crafting custom-tailored



robots based on their existing silicon RealDoll design – essentially playmates for adults. By adding a robotic head with facial expressions (and a swappable face system), eye and mouth movements, and links to a Bluetooth speaker system, they've created an AI-enabled bedroom companion just like Henry from [realbotix.com](http://realbotix.com)

**Junko Chihira.** If you prize social skills over agility, then Toshiba's Junko Chihira may be your match. This trilingual android is alarmingly human-like in appearance, and has what many consider to be the best interaction skills of any bot currently on the market. She's employed full time at a tourist information point in Tokyo, where she'll happily strike up a chat about the city's best attractions in your choice of Japanese, English, or Chinese.

