

# One Robot Could Transform The Lives Of People With Disabilities Across The World

Staffordshire University



Even the most basic tasks such as shaving, cooking or cleaning can be a struggle if you are disabled or elderly, forcing you to rely on others just to get through life's daily chores. But a robotic caterpillar developed by scientists at Staffordshire University allows people to perform the basic tasks of day-to-day living by themselves, with the privacy and dignity that the able-bodied take for granted.

'Flexibot' is the world's first robotic arm that can propel itself like an inchworm from one socket to another across a room. It takes the form of an arm, jointed in the middle and at either end, which can clamp itself to socket on a wall or ceiling. By plugging one end into a socket and then reaching over and plugging into the next one, it can move around on its own accord. Taking instructions from each 'intelligent' socket, it performs different tasks using its three-fingered hand to grip and manoeuvre objects.

Several multi-national companies are currently discussing how the robot could be mass-manufactured to transform the lives of people with disabilities across the world. Its benefits are simple: it is cheap, accurate, and flexible. It also works: Flexibot is based on the same principles as 'Handy one', currently the most successful rehabilitation robot in the world.

Sheffield Hallam University meanwhile have developed artificial arms that work and move like real limbs. The results of the 'Analogous Artificial Arm' project are already being used by the National Aeronautics and Space Administration (NASA) to help develop a robot skeleton with plastic muscles for future space missions.

“ *Other future applications include elbow implants, and machines controlled by computers that can be used to mimic surgical operations.* ”

Researchers at Leeds Metropolitan University are using computers to help people with autism and Asperger's Syndrome learn how to deal with potentially problematic social situations. The simulations ask computer users for example to choose where they should join a queue and illustrate the consequences of their choices. The software is being designed to make it easy for parents, teachers or carers to write new simulations aimed at their young people with autism.

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