

## The Real Robot Revolution

By Michael Milford  
(IEEE Member)

The Terminator pauses, its red glowing eyes scanning the environment. Flashes of laser fire flash past in the background, as Hunter Killer robots fly overhead. Suddenly, the cyborg catches sight of movement and its red pupils shrink to a small pinpoint. It raises its plasma rifle and starts to walk mechanically, with single minded purpose; destroy all that is human!

This scenario is the one that much of society is familiar with; the post-apocalyptic, dystopian future ruled by machines. Successful movies such as the Terminator franchise and Matrix trilogy have planted firmly in our minds the idea of machines and artificial intelligence (AI) 'out of control' and becoming overlords of humanity. While this may be a possibility in the long term, in the short to medium term (read the next twenty or thirty years) there are more plausible scenarios in which robotic and automation technology will start to 'take over' humanity, so to speak.

Back in the real world, robotics has been an integral part of many industries for several decades, such as car manufacturing. However, these robots have generally been expen-

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sive, highly specialized pieces of equipment, with which the vast majority of the population has had no direct contact. More recently, a new wave of robotics has started to enter the domestic home – domestic service robots. The best example is surely the range of vacuum cleaner robots now available in normal retail stores, with names such as *Roomba*. The growth in this area has been nothing short of phenomenal; from 54,000 domestic service robots at the end of 2002 to 3,400,000 units at the end of 2007, according to the “World

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Robotics 2008” survey by the United Nations Economic Commission for Europe.

The *real* robot revolution started when the population first gained access to cheap, mass produced domestic service robots that actually save some customers time (depending on having a robot-friendly house) and hence positively impact their quality of life. While many vacuum robots were purchased for their ‘robot appeal’, for the first time in history some members of the general public were buying a robot because it would make their life just that little bit easier. It is also important to note that the vast majority of these existing floor cleaning robots are relatively ‘dumb’ machines, operating without knowledge of where they are in absolute space, and far inferior in capability to the state of the art research robots. Yet they are able to replicate, albeit inefficiently, some aspects of a very common task carried out in millions of homes.

While society should still retain an appreciation of the more extreme sci-fi scenarios, it is the creeping entry of ‘mundane’ robotics



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into the home and workplace that should be given the most attention. ‘Low level’ robotics and automation is already very much present in our everyday lives, from automatic check-outs, computer phone line operators, and car washes. While there is still much research progress to be made, there are millions of blue collar jobs that can and will be at least partially performed by robots in the next few decades, without requiring the creation of true AI. Instead, the improvements will come from incremental advances in mechanical, control, sensor and AI research. Robots will start to be involved in roles such as stacking shelves, simple cooking tasks, and more advanced cleaning tasks.

Robots are becoming an increasingly widespread presence in our everyday home and work lives. Just because they are not particularly bright or scary does not mean we should not be prepared.

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