Controlling Physical Systems

Video transcript for 'Controlling Physical Systems'

Computer technology… it gets everywhere. It can be used to control physical systems like robotics, motors and sensors.

But this isn't the stuff of science fiction. There are examples of sensors all around us in the real world.

So our street lights switch on automatically when it goes dark… we activate our TV systems at the flick of a switch… we walk through doors without having to break stride.

Then there are motors driven by computer technology, in things like cranes. Or in robots exploring new frontiers, like Mars. In places where humans can't actually survive, computers can help explore for us.

They can also simulate environments that would be too dangerous or expensive to create or explore in real life.

For example it is much safer and cheaper for this pilot to learn how to fly in a simulator.

Another aspect of physical systems controlled by computers is that machines can operate faster than humans, and run 24 hours a day.

We now use computers to control all sorts of systems. Air conditioning and heating in large buildings… Security systems and burglar alarms… traffic lights. So now we know what control systems can do, let's check how they work.

A control system usually consists of a computer or microprocessor… a control program which handles data from sensors, and sends signals to output devices.

Finally, there's an interface box, which converts signals between the sensors and the processor. And that's how computers can control physical systems, from almost any villain's lair… I mean headquarters… I mean, anywhere.