Past, present, future

Past

The first instance of 'spam' (unsolicited email) is believed to have been an announcement of a product presentation sent on 3 May 1978 by a Digital Equipment Corporation salesman to several hundred scientists and researchers on the ARPAnet – the original version of the Internet.

Present

80 per cent of text messages currently received in Japan are unsolicited junk texts ('spim').

Future

Watch out for 'spouch' or 'touch spam'. 'Haptic' interfaces – Interacting with computers by touch rather than sight – is a hot area of research right now. Mobile phones that vibrate silently in your pocket are a very simple version of a haptic interface. Sending sensations over the Internet is an obvious thing to do with it – sending people digital hugs rather than texts – and the spammers won't take long to catch on.

The future may also hold lots of 'spit' in store (spam on Internet telephones). It won't be long before Internet phones are commonplace: phones that use Wi-Fi networks to allow people to talk over the Internet rather than by using the expensive telephone networks. At that point the spammers are likely to start sending junk voicemails…

When do you think the first database was built? 5 years ago? 15 years ago? 50?

In actual fact, one possible contender for the first database is a book created by Saint Isidore of Seville. His 20-volume book *Etymologiae* aimed to be an encyclopedia of all knowledge 1,400 years ago, covering subjects like grammar, geometry, law, military history, agriculture, public games and furniture.

Etymologiae was structured in a way very similar to a modern database, hence the claim to be the creator of the first database. He drew his information from a vast number of sources, and accepted all the 'facts' collected unquestioningly. *Etymologiae* was very much like the web in that readers have to make their own judgements – he included both reliable and unreliable information for his readers to choose from, as a search engine might for you.

Computers follow rules – so do our brains

Like a computer, our brain uses 'rules' to help us understand the world. Often we don't know that our brain uses these rules, and it's only when the rules break down that we notice this. This is where optical illusions come in.

In an optical illusion, the human brain makes a mistake in understanding the world. In the example here, you can see two normal upside-down faces. Not such a strange situation. Your brain has rules for recognising faces, which are very useful. But because it's not used to seeing faces upside down, the rules your mind uses to 'put a face together' are not as easy to apply. So, if you turn the pictures upside down, you suddenly see that your brain was confused in checking the rules. You'd never have made that mistake if the faces were upright!

That means that if you want to become a computer scientist, it helps if you understand the way that people's brains work, so that you can write program rules that let the computer cope with people. One ongoing challenge is to write rules that make computers not only behave as cleverly as people when involved in solitary activities like chess but that can also behave like good team players – working to our strengths and avoiding the weaknesses that result from our brains applying the wrong rules.

Computer science is about people too!
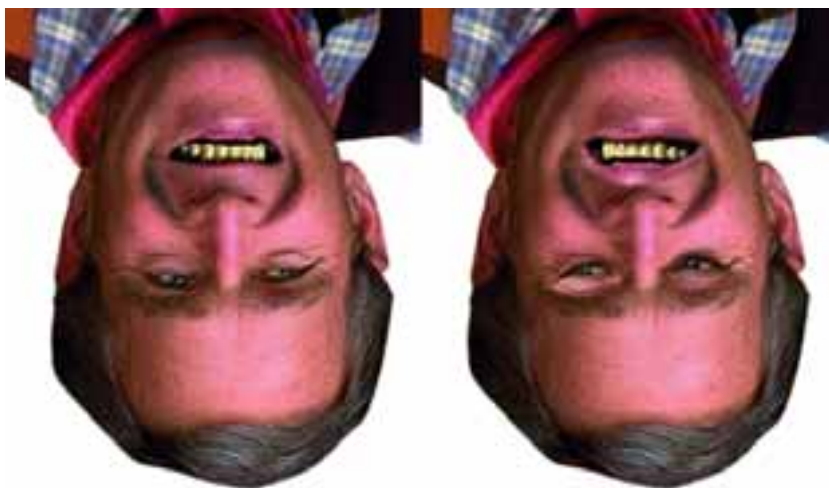
Do you think that the pictures have just turned George Bush upside down? Turn the image around to see!

The Matrix Reloaded – sorry to bug you

In The Matrix Reloaded (2003) Neo, Morpheus, Trinity, and crew continue their battle with the machines that have enslaved the human race in the virtual reality of the Matrix.

To find the Oracle, who can explain what's going on (which, given the twisty plot in the Matrix films, is always a good idea), Trinity needs to break into a power station and switch off some power nodes so the others can enter the secret floor. The computer terminal displays that she is disabling 27 power nodes, numbers 21 to 48, but that's actually 28 nodes: a computer that can't count and shows the wrong message.

Sadly there are far too many programs with mistakes in them. These mistakes are known as bugs because back in 1945 Lieutenant Grace Hopper, one of the women pioneers of computer science, found an error caused by a moth trapped between the points at Relay 70, Panel F, of the Mark II Aiken Relay Calculator being tested at Harvard University. She removed the moth, and attached it to her test logbook, writing 'First actual case of bug being found', and so started the term 'debugging a computer program'. As the Oracle would no doubt say 'Check for moths Trinity, check for moths'.