The magic of ~~Christmas~~ Computer Science

Wednesday 2 December 2015. Doors open at 5pm for a 5.30pm start. Ends 6.30pm followed by reception

Maths and computer science are behind today's technological wizardry...

Let us guide you to the secret magical mystery world where science meets conjuring…

Your hosts

Professor Peter McOwan QMUL Vice-Principal (Public Engagement and Student Enterprise) and Professor Paul Curzon.
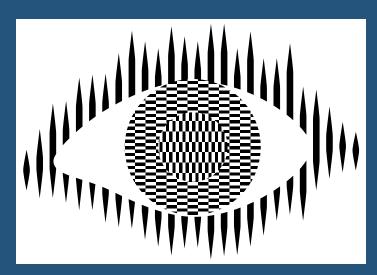
Peter McOwan and Paul Curzon are Professors of Computer Science in the School of Electronic Engineering and Computer Science at Queen Mary.

As researchers and academics they apply their 'magic' to everything from robotics and artificial intelligence to the software of medical devices. Their infectious enthusiasm for exploring the endless possibilities of computer science has led them both to be elected as National Teaching Fellows.

They work closely with the Computing at Schools network (they were both founding members), and Paul also runs Teaching London Computing, which creates inspiring activities for teachers to use in class.

They also run 'Computer Science for Fun', a magazine about the fun side of computing, and have been giving linked computing magic shows for over 10 years.

Ouchi Eye Illusion

This optical illusion is named after its creator, the Japanese artist Hajime Ouchi.

The central circle seems to float independently of the background eye as though it was a separate object. The illusion is even more pronounced if you move your head up and down or side to side.

Fading into the background
You probably take it for granted, but being able to recognize separate objects out of the mass of light signals all around you is a difficult trick to pull off. An important part of that is working out what is in the foreground and what is in the background. It's something that all animals need to be able to do quickly without thinking: especially when it's a tiger in the foreground!

To make it possible your brain has to make some guesses. Some neurons are tuned to pick up vertical movements and others horizontal movements. The horizontal and vertical patterns in the picture confuse the brain into thinking the disc and background are moving independently – it jumps to the conclusion that one is in the foreground and the other the background.

What's this got to do with computing?
There are lots of applications in computing from making it possible for robots to move around complex environments to smart security cameras that can spot a suspicious object like an unattended bag. If we can manage to make computers that can make sense of what their cameras see, just as we do, think of the possibilities!