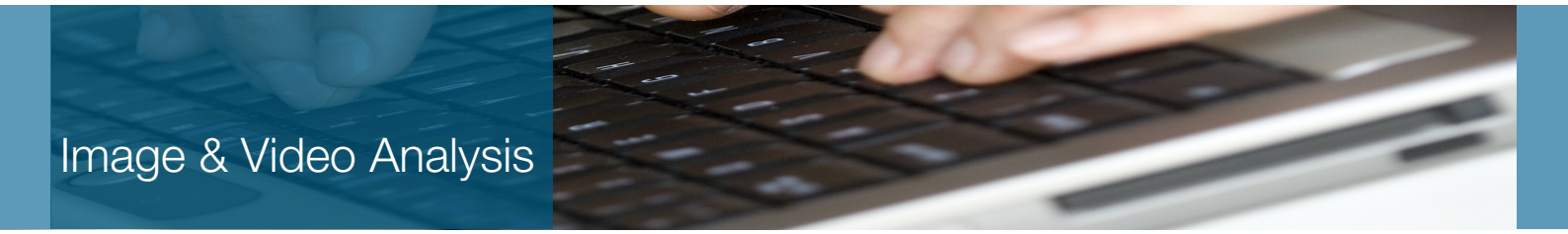
University of East Anglia

SYS CONSULTING



Computerised lip-reading: research breakthrough April 09

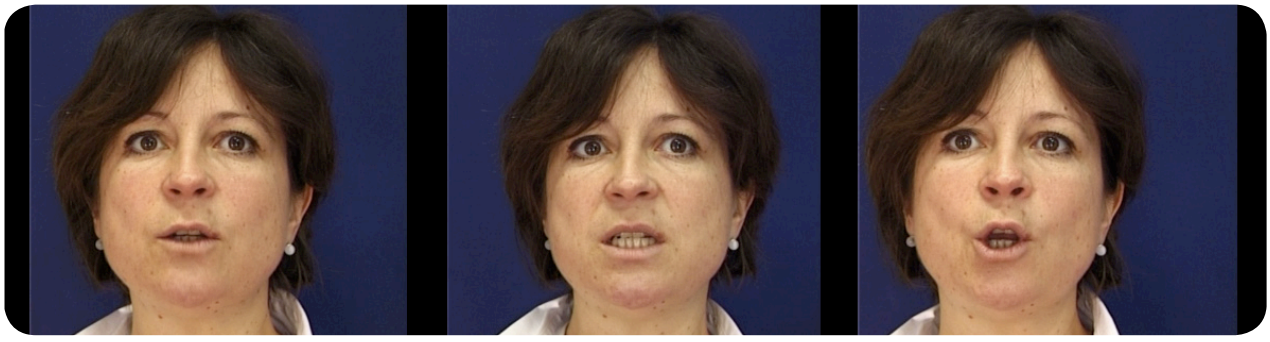
Business Challenge

As part of the research project developing a computerised lip-reading system which converts videos of conversations into written transcript has resulted in a significant breakthrough. Led by Stephen Cox and Jake Newman of the University's School of Computing Sciences, the team have created lip-reading computers that can actually distinguish between different languages.

Our Solution & Expertise

The technology was developed by statistical modelling of the lip motions made by a group of 23 bilingual and trilingual speakers. These languages included English, French, German, Arabic, Mandarin, Cantonese, Italian, Polish and Russian. The team used a facial recognition system to track how the volunteers' lips moved and the sequences of shapes they formed, and used statistical analysis to learn which sequences were telltale signs of a particular language being spoken. The system was able to identify which language was spoken by an individual speaker with very high accuracy.

Professor Stephen Cox commented: "This is an exciting advance in automatic lip-reading technology and the first scientific confirmation of something we already intuitively suspected – that when people speak different languages, they use different mouth shapes in different sequences."



Frames from a speaker speaking German, English and French. Our software can distinguish the languages with high accuracy

Business Benefits

The work will feed into the project developing automatic lip-reading techniques: identifying the language spoken is the first stage of a fully automatic system.