



Optimising training time for eye surgeons

► MASTERS (Minimal Access Surgery Training, Evaluation and Reporting Software)

Academic: *Dr Lilian Tang*

Assessing the work of trainee eye surgeons has until now relied on human feedback which may not be objective or consistent. A new system developed at Surrey, together with Moorfields Eye Hospital, uses novel software to solve this problem.



The new tool, developed at the University of Surrey, is known as MASTERS (Minimal Access Surgery Training, Evaluation and Reporting Software), and analyses videos of live surgery, feeding back objective information to the trainee surgeon. Building on previous research at Surrey funded by the EPSRC, the IAA project – co-funded by Moorfields – has refined the computer vision algorithms behind the software to develop a commercially viable product.

“With the amount of hours trainee surgeons spend in the operating theatre having been reduced under the European Working Time Directive, it is particularly important that surgical training is as time-efficient as possible,” explains Dr Tang.



Lead researcher Dr Lilian Tang worked closely with Moorfields’ Director of Simulation Training George Saleh to develop the MASTERS system, which will initially be used for cataract surgery training, then adapted for other surgical procedures. The system assesses the dexterity of the surgeon by monitoring the tiny movements made by instruments in the surgical field.

“The benefits of the MASTERS system will be faster, more consistent training, with resultant benefits to patients through reduced errors and cost savings for the NHS.”
