

## **Voice activation visualization of cardiovascular angiography and 3D coronary arteries in surgery**

### **ABSTRACT**

Exploring the computer systems and accessing a software and performing a surgery at the same time is a quite heavy task to achieve by surgeons in the operating theatre. This paper presents a way to design a system which utilises voice recognition to select, visualise and fully control cardiovascular angiography and their 3D models. The work starts by choosing an angiography image using voice only. Next, the image is processed to extract complete tree of arteries. Finally, the system processes the segmented arteries to display the reconstructed 3D arteries. The software is able to fully control the reconstructed 3D coronary arteries by voice in order to rotate, zoom-in and out, speed-up and down the rotation, spelling out the voice commands, voice-on and off, and terminating the system. The system was tested by a consultant heart surgeon on a real data and he approved the credibility of the system.