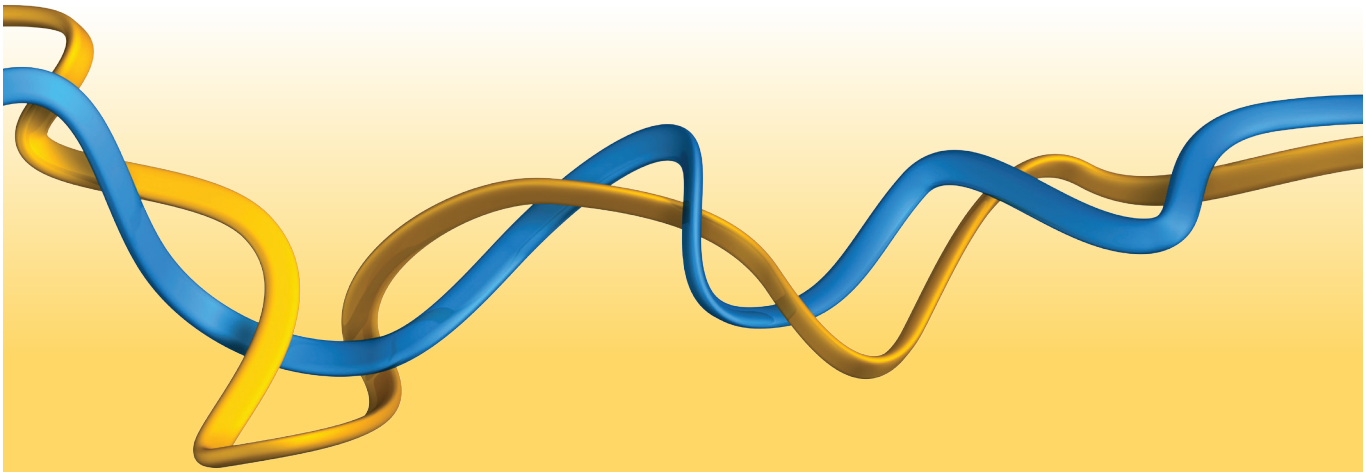
ROYAL ACADEMY OF ENGINEERING

Biomedical engineering careers series

practical engineering at the front line of the health service



Alessandro Ciucci

Software engineer

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Biomedical engineer Alessandro Ciucci is a truly European engineer. Italian-born, he was schooled in Germany and from there went to a UK university. Now he works in the Netherlands with the Imaging Systems division of Philips Healthcare, part of the global Philips company.

Diversity, and not just in geographical location, is partly what attracted Ciucci to biomedical engineering as a career. "It's a very broad field and it has so many different aspects," he says. "It has what I call a 360° span. It brings together technology with lots of different engineering disciplines and physics and the biology and physiology." Fellow students from his four-year MEng undergraduate course in biomedical engineering at Imperial College London are now in a very wide range of jobs, he says.

But Ciucci was also attracted to study biomedical engineering because of the humanitarian aspects. "I wanted to be able to apply engineering to something that has a very direct effect on people's lives," he says.

The work he has been engaged with since joining Philips Healthcare at the start of last year gets to the heart of biomedical engineering: literally. He has been working in a team in the interventional X-ray division to develop software for the EP Navigator. This is the system that helps surgeons to precisely direct and position catheters to treat the phenomenon of atrial fibrillation from the inside of the heart.

Atrial fibrillation happens when the heart's two smaller upper chambers quiver rather than beating properly. The result is that the blood does not completely exit the chambers and so clots can build up, which could then cause a stroke or a blockage elsewhere. Using the Philips guidance system, surgeons who are watching on a huge x-ray screen can steer a catheter into position to deliver a burst of radio-frequency energy, restoring a normal heartbeat.

The technique has been used for some years but is highly complex and time-consuming and was therefore only available in a few hospitals. The work that Philips has been doing has extended its availability, and has the prospect of saving countless thousands of lives across the world.

The software team, says Ciucci, has an interesting mixture of people with general biomedical engineering knowledge and specific areas of expertise. Not originally a software specialist himself – "most of my course at Imperial was about hardware" – he has taken responsibility not just for software development but also for testing it and ensuring it complies with regulations.

He's found that Philips is a very open group and although he's in a direct full-time role and not on one of the graduate training schemes, he says he's received a lot of encouragement to progress his career.

"I've made no secret that I don't see myself in programming forever. What I'm really passionate about is business innovation and identifying new strategic opportunities, and I'm working towards my next step in this direction via more business oriented assignments."

Biomedical engineering, he says, is challenging and exciting. "If you are a technical person but are also intrigued by the human body, it's a field where you can really create knowledge and make a difference."