

Dr Siraj Shaikh

Industrial Fellowships Scheme



Dr Siraj Shaikh, a Reader in Cyber Security at the Centre for Mobility and Transport at Coventry University, took part in the Royal Academy of Engineering's Industrial Fellowships Scheme between 2015 and 2016. His fellowship allowed him to work on a collaborative project on automotive cyber security with HORIBA MIRA.



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RESEARCH

Dr Shaikh's research interests include cyber security, systems engineering and computer science. He has developed expertise in a variety of methods used to address cyber security issues across different transport sectors.

As software becomes an increasingly integral part of automotive engineering, so does the need to ensure there are robust tools for security assessment within the industry. Dr Shaikh's interests in this field led him to apply for the Industrial Fellowships Scheme to collaborate on a project with HORIBA MIRA, a company that specialises in vehicle engineering design, test and development.

A specific aim of the project was to look at developing automated tools to evaluate and test security issues during the design process. The collaboration also looked at developing test scripts to assess for resilience against deliberate hacking attempts.

“Automotive cyber security is a complex challenge,” Dr Shaikh explains. “The fellowship allowed me to work collaboratively on ideas of system design and testing to address the problem, and also understand the business models needed to generate a clear revenue stream. One clear outcome of my research is that this problem cannot be solved by testing alone: system design, regulation, legislation and insurance instruments are all critical parts of the jigsaw.”

IMPACT

The fellowship provided an opportunity for HORIBA MIRA to benefit from academic insights on the technical challenges related to automotive cybersecurity. Coventry

University also benefited from developing this industrial link.

“The longer-term benefit arises from an informed teaching and research agenda, student dissertation themes, and the jointly funded doctoral students,” Dr Shaikh continues. “HORIBA MIRA has been very open to furthering the dialogue with university colleagues in other areas of automotive and transport research too.”

To ensure that the work developed during this collaboration has impact beyond the fellowship, funding has been agreed for two PhD students to work in this area with HORIBA MIRA. There are also plans for joint research bids and joint representation on industry and policy platforms.

PROFESSIONAL DEVELOPMENT

The fellowship has helped Dr Shaikh by providing time for him to develop his research.

“I have always valued industry engagement and have felt that it gives a strong purpose to my research. This fellowship has been very valuable in offering a platform for my research to grow in a new area aligned with a real world need. It has also enhanced my understanding of university-business collaboration.”

INDUSTRIAL FELLOWSHIPS SCHEME

The Industrial Fellowships Scheme provides an invaluable opportunity for early- to mid-career academics to undertake a collaborative research project in an industrial environment. The scheme aims to strengthen the strategic relationship between the university and the industry host by providing an opportunity to establish or enhance collaborative research between the two parties and enhance the quality of teaching.