

Topic: Metrology in the context of future 5G enabled manufacturing systems
Location: Loughborough University

Data exchange is central to industry 4.0, and as factories become more connected technologies such as 5G are set to revolutionise the speed and scale at which measurement data can be collected, processed, and distributed. In highly interconnected factor networks, trustworthy data will become even more important. Questions such as can I trust the accuracy of the data, must also be combined with new ones such as: can I trust the data will be available when I need it, can I trust the data was collected when I thought it was, can I trust it originated where I thought it came from, etc. Traditional metrology frameworks, that are used to provide trust in measurement systems through predominantly uncertainty analysis, do not currently extend to include this broader set of emerging issues. This PhD study will investigate the metrology approaches and new metrics needed to provide fully trustworthy data for future highly connected manufacturing systems.

The project will be supervised by Dr Peter Kinnell and Dr Jon Petzing, from the Wolfson School of Mechanical Electrical and Manufacturing Engineering.

The position is available for UK candidates, but EU or International applicants who can pay the difference between the Home and International Fees would also be welcome to apply. Candidates must possess or expect to obtain, a high 2:1 or 1st class degree in a related science or engineering discipline.

Supervisor: Dr Peter Kinnell



Is a Reader in Metrology and held an EPSRC Manufacturing Fellowship in Collaborative Metrology for High Value Manufacturing. He is the assoc. Director of the Intelligent Automation Centre at Loughborough University where he leads the research team working on 3D vision for robust intelligent measurement. He is currently working on the creation of new sensing technology, new algorithms for advanced data processing, and implementing measurement systems within automation and manufacturing systems.

Supervisor: Dr Jon Petzing



Jon is a Senior Lecturer in Metrology with expertise in the fields of engineering metrology and biometrology. He has invented metrology theory and systems, developed standards, defined industrial applications, and worked with multiple National Measurement Institutes around the world. He was a member of the UK National Measurement Office Engineering & Flow, and is now a member of the BSI BTI/1 Biotechnology Committee, advising on metrology for biomanufacturing standards development.