

## Title: Augmented Reality for Information Visualisation in Fusion Plant Monitoring and Operations

*Type of award* PhD Research Studentship

*Department* Computer Science

*Scholarship Details* Scholarship covers full UK/EU (EU applicants who have been resident in the UK for 3 years prior to 1<sup>st</sup> September 2018) and a tax-free stipend at the current RCUK rate (£14,553 in 2017/18) plus an industrial top-up of £3395 p.a. (subject to contracts). EU nationals resident in the EU may also apply and will qualify only for PhD tuition fees.

*Duration* 3.5 years

*Eligibility* Home/EU applicants only

*Closing Date* 31 July 2018

### PhD Topic Background/Description

This PhD studentship is a collaboration between the University of Bristol and the UK Atomic Energy Authority through its R&D centre in Remote Applications in Challenging Environments (RACE). It will involve research into how Augmented Reality (AR) techniques can be used for the fusion power industry. It will map out the challenges in realising the visualisation and manipulation of Building Information Model (BIM) data in live scenarios through AR and detail the potential gains for the industry. It will also involve developing a proof-of-principle demonstrator, illustrating the benefits of linking BIM data to the physical environment via AR for example scenarios. It will be developed in close collaboration with RACE and the studentship will include a 6 month or more secondment to RACE.

The research will focus on the complete processing and delivery pipeline, including localisation, physical mapping, (multi) user interaction, display and data manipulation and storage. This will include developing state of the art AR techniques involving the development of algorithms and systems for object recognition, 3-D tracking, 3-D reconstruction and HCI. There will be a strong emphasis of developing technology suitable for the industry and for users, and for rigorous evaluation of their effectiveness in real scenarios. This means that the PhD will be of an interdisciplinary nature and candidates for the studentship would be expected to have a keen interest in interdisciplinary research. To reflect this, the studentship will be jointly supervised by Dr Andrew Calway (tracking, SLAM and AR), Prof Tom Scott (nuclear monitoring and radiation mapping) and Dr Kirsten Cater (HCI and human factors), all based at the University of Bristol.

## Further Particulars

### Doing research at the University of Bristol

The quality of research at the University of Bristol places it within the top five Universities in the UK based on the Research Excellence Framework and Times higher Education rankings 2014-15. The PhD candidate will be a part of a friendly and diverse community, with the Bristol Doctoral College (BDC) as the focal central coordinating facility. Alongside the specialist training the candidate will receive in PhD-specific topics, the BDC offers approximately 200 courses, interactive workshops and seminars as a part of the University's Personal and Professional Development Programme for PGR students. The BDC organises University-wide events and provides a hub of information, guidance and resources to help researchers to get the most of their time at Bristol.

### Candidate Requirements

Applicants should have or expect to achieve a first-class or high upper-second class degree (or equivalent) in Computer Science or relevant engineering discipline.

Strong programming and mathematical skills are essential. Knowledge of and/or experience with computer vision, visual SLAM, tracking, object recognition, HCI and/or augmented reality would be advantageous.

### Informal enquiries

For informal enquiries please contact Dr Andrew Calway [Andrew.Calway@bristol.ac.uk](mailto:Andrew.Calway@bristol.ac.uk)

For general enquiries, please email [sceem-pgr@bristol.ac.uk](mailto:sceem-pgr@bristol.ac.uk)

### Application Details

To apply for this studentship submit a PhD application using our [online application system](#)  
[[www.bristol.ac.uk/pg-howtoapply](http://www.bristol.ac.uk/pg-howtoapply)]

Please ensure that in the Funding section you tick "I would like to be considered for a funding award from the Computer Science Department" and specify the title of the scholarship in the "other" box below with the name of the supervisor.

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