

## **RESEARCH STUDENTSHIP**

All studentships are highly competitive, and you should ensure (and demonstrate) that there is a good match between your own qualifications and interests and those being sought for the particular studentship.

Research School where studentship will be held	Computer Science Research Centre, Faculty of Natural Sciences, Keele University.
Studentship reference	FNS_AAIsaidAhmad_Feb24
Web link to any further information (e.g. Research Institute/School/Faculty )	Computer Science Research Centre: <a href="https://www.keele.ac.uk/scm/research/computerscienceresearch/">https://www.keele.ac.uk/scm/research/computerscienceresearch/</a> Faculty Research Office: <a href="https://www.keele.ac.uk/natsci/research/">https://www.keele.ac.uk/natsci/research/</a>
Research topic or field - title	Instrumenting Cloud Systems for Scalability and Resilience

<p>Research topic or field full description (or attached document).</p>	<p>Cloud computing is essential for global connectivity. It empowers businesses, governments, and individuals to create and use cloud-based services for various everyday systems, including critical fields such as telecommunications, healthcare, banking, and many more. Nowadays, cloud solutions present challenges in scalability, reliability, and resilience. Failures can happen unpredictably, potentially disrupting everyday systems. This is crucial for distributed cloud-based systems, which are built with complex behaviour and failure modes. Cloud computing scalability is crucial for these systems to handle massive amounts of 5G content, IoT devices, and AI solutions.</p> <p>This PhD will focus on cloud computing scalability and resilience, using fault-injection techniques, including ‘chaos engineering’ to validate cloud systems against failure. Additionally, this will study how instrumentation can help track faults and improve scalability.</p> <p><b>Research Context:</b> The research will be supervised by Dr Amro Al-Said Ahmad in the Centre for Computer Science Research at Keele University, potentially with other national and international project partners. For more information about the cloud computing research at Keele, Please visit:  <a href="https://www.keele.ac.uk/research/ourresearch/computerscienceandmathematics/computerscienceresearch/futuresystems/cloudcomputing/">https://www.keele.ac.uk/research/ourresearch/computerscienceandmathematics/computerscienceresearch/futuresystems/cloudcomputing/</a></p> <p>Keele University is renowned for its exciting approach to higher education and research, beautiful campus, strong community spirit and excellent student life. The University has the UK’s largest campus, with 617 acres of landscaped parkland, fields, woodlands and lakes. Keele University runs its own day nursery for infants from 3 months to 5 years and is committed to equality and diversity. Information for prospective postgraduate researchers can be found here:  <a href="https://www.keele.ac.uk/study/postgraduateresearch/">https://www.keele.ac.uk/study/postgraduateresearch/</a></p>
<p>Expected start date</p>	<p>Available now</p>
<p>Mode of attendance</p>	<p>Full-time, Part-time, Distance-learning (FT/PT)</p>
<p>Funding support available – Fees, stipend, duration</p>	<p><b>Funding:</b></p> <ul style="list-style-type: none"> <li>• <b>Self-funded:</b> Please note that self-funded applicants must provide funding for both tuition fees and living expenses for the 3-year duration of the research. There is a future possibility of competitive scholarship awards for outstanding applicants (1st class honours). However, none are currently available. For information regarding University tuition fees, please see:  <a href="http://www.keele.ac.uk/pgresearch/feesandfinance/">http://www.keele.ac.uk/pgresearch/feesandfinance/</a></li> </ul> <p>Students are also provided with access to Faculty research training funds for research related expenses including - but not limited to - conference attendance, external training courses and UK fieldwork.</p>

Source of funding	<p><i>This opportunity is for self-funded applicants only (for example, international students with government or industry sponsorship and UK students with Doctoral Loan funding:</i>  <a href="https://www.gov.uk/doctoral-loan">https://www.gov.uk/doctoral-loan</a>).</p>
Eligibility criteria	<p>Applications are welcomed from Computer science, Software Engineering, and technology graduates with (or anticipating) at least a 2.1 honours degree or equivalent. Applicants should have good computing skills and an enthusiasm for coding, designing, and testing. They should be self-motivated and able to work independently and as part of a team.</p> <p>This opportunity is open to UK, EU and overseas students. The collaborative and presentation aspects of the research require good English language and communication skills.</p>
Terms and conditions of	As per the <a href="#">University Code of Practice</a>
Number of studentships available	NA
Application details	Please go to <a href="http://www.keele.ac.uk/pgresearch/studentships/">http://www.keele.ac.uk/pgresearch/studentships/</a> and click on the "Apply online here" button in this studentship. Please quote on your application.
Closing date for applications	Applications are welcome all year round.
Contact for further information and to whom applications will be sent	<p>Informal enquiries about the studentship are very welcome by email to the Project Lead, Dr Amro Al-Said Ahmad (<a href="mailto:a.m.al-said.ahmad@keele.ac.uk">a.m.al-said.ahmad@keele.ac.uk</a>).</p> <p>Full applications should be submitted to:  <a href="https://www.keele.ac.uk/study/postgraduateresearch/researchareas/computerscience">https://www.keele.ac.uk/study/postgraduateresearch/researchareas/computerscience</a> (For candidate profile, please see page 3 of this advert)</p>

## Candidate profile

	Essential	Desirable
<b>Qualifications, Experience and Skills</b>	<p>Applications are welcomed from Computer Science, Software Engineering, and technology graduates with (or anticipating) at least a 2.1 honours degree or equivalent. Applicants should have good computing skills and an enthusiasm for coding, designing, and testing.</p> <p>Applicants should have an enthusiasm for design and experimentation as well as a willingness to acquire new skills. Ideally, applicants will be self-motivated and have the ability to work both independently and as part of a team.</p> <p>This opportunity is open to UK/EU and overseas students. The collaborative and presentation aspects of the research require good English language and communication skills. Overseas applicants would, therefore, require an English IELTS (or equivalent) of 6.0 overall with no less than 5.5 in any subtest.</p> <p>For PGR students joining us from August 24 onwards, for all subject areas, we require IELTS 6.5 with no less than 6.0 in any subtest.</p>	
<b>Attitude and Personality</b>	<p>Good interpersonal skills.</p> <p>Ability to work independently and as part of a team on research programmes.</p> <p>Ability to initiate, plan, organise, implement and deliver programmes of work.</p> <p>Willingness to learn new skills.</p>	

Keele University values diversity, and is committed to ensuring equality of opportunity. In support of these commitments, Keele University particularly welcomes applications from women and from individuals of black and ethnic minority backgrounds for this post. More information is available on these web pages:

<https://www.keele.ac.uk/equalitydiversity/>

<https://www.keele.ac.uk/athenaswan/> <https://www.keele.ac.uk/raceequalitycharter/disabilityconfident/>