

***Masters by Research Scholarship Ad***

<b>Research Opportunity In :</b>	Information Technology
<b>Title of Proposed Research Degree Project:</b>	Assisting medical diagnosis through Fog computing and Machine Learning
<b>Description:</b>	<p>Wearable medical devices are used in the monitoring of patient wellbeing. The connection of these 'things' to the Internet is part of the Internet of Things (IoT). Many of these devices need to send information to 'the Cloud' for data to be recorded and/or processed. The IoT is creating enormous amounts of Internet traffic, which is not sustainable in terms of storage and bandwidth.</p> <p>Fog computing has been defined by the OpenFog Consortium in the IEEE 1934 standard. It seeks to bring the processing power of the server in the cloud towards the IoT device, perhaps at the edge of the local network to achieve compression and/or processing of the data to reduce delay, latency and storage. The processing is accomplished in a 'fog node'.</p> <p>The data that is collected by the IoT device will be analysed through Machine Learning (ML) systems in the fog node. Analysis will be assisted through the use of machine learning algorithms which will help classify the data into specific classes of medical conditions. The processed data will be transmitted to the cloud, for review by medical experts to diagnose a patient's condition. This reduces the time for both upload and processing by technicians achieving a quicker diagnosis for the patient with less resources required in the cloud.</p> <p>This research will be of benefit to any companies developing, or using, medical diagnostic IoT devices in their business model, to help them build fog networks and achieve efficiencies in the diagnosis of patient's condition.</p>
<b>Scholarships Condition:</b>	Funded by the Graduate Research Office – <b>Postgraduate Fees for a period up to two years full-time and a stipend</b>
<b>Requirements of Candidate:</b>	<ul style="list-style-type: none"> <li>▪ <b>Level 8 Honours Degree</b> in an appropriate field of study is essential (Grade 1:1 degree preferable, applications considered with a Grade 2:2 or higher with relevant experience),</li> <li>▪ Experience of advanced research and relevant work experience</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Commitment to a 24-month programme of study and research full-time</li> <li>▪ Self-motivated with an ability to be self-directed in much of their own work</li> <li>▪ Able to plan work over longer periods and have strong writing and analytical skills</li> <li>▪ Interest in pursuing a career in academia and/or research</li> <li>▪ Interest in pursuing postgraduate studies in areas related to (please complete as relevant to your programme): Computer Networks, Machine Learning, Medical Devices and IoT.</li> </ul>
<b>Contact:</b>	Informal Research Enquiries should be directed to Mike Winterburn, Telephone: (+353 61 293844), Email: Michael.winterburn@lit.ie.
<b>Deadline for applications:</b>	6 <sup>th</sup> December 2019
<b>Application Process:</b>	<p>Application forms to be emailed to the Graduate Studies and Research Office, LIT. Email: <a href="mailto:graduatestudies@lit.ie">graduatestudies@lit.ie</a></p> <p>For queries on application process please contact: <a href="mailto:graduatestudies@lit.ie">graduatestudies@lit.ie</a></p>