Industrially funded 1 year MPhil Degree opportunity from University of Leicester’s Innovation Hub

Please note these positions are only available to UK and EU students

One year fully funded industrial MPhil available from the University of Leicester (Department of Engineering) to undertake applied research and development on behalf of a Small and Medium Enterprise (SME) in Leicester and Leicestershire. The MPhil research will help inform the development of a new product (beta App) for farmers to enable them to control the amount of fertilisers they use.

The fully funded MPhil is delivered funded by the Leicester Innovation Hub, part-funded by European Regional Development Fund, and the sponsoring SME.

“A novel support tool to help farmers determine nitrogen fertiliser application plans using satellite imagery.”

Project Ref: LIH014

Background
The proposed MPhil is a continuation of a collaboration between the Department of Engineering at University of Leicester and a Leicester based SME offering a range of services to farmers. The R&D collaboration’s aim is to help farmers increase efficiency of fertiliser use and thus cut costs and increase yield. In 2017, the two organisations completed a feasibility study which explored the viability of developing an on-farm system to provide farmers expert advice on variable rate nitrogen fertiliser applications based on processing of satellite imagery data. A follow-on project with additional partners is proposed to develop a beta prototype.

The Project
The goal of the MPhil proposed research project is to take the outcome of the feasibility study further and implement a variable-rate fertiliser decision-making and prescription software tool. The tool will be based on the developed functional model of the system, which is captured with Matlab. The model was validated through test campaigns with farmers. It incorporates several components, such as satellite image processing, Geographic Information System (GIS) functions and expert agronomist knowledge. The software tool will be implemented using the ‘C’ programming language. The Matlab model will be constantly upgraded with additional features, as necessary, during the project work and will be used as a reference for testing of the tool before it is validated by users.

Ultimately, the service/product developed through the project will provide the SME with a new product and service which it can sell to farmers (i.e. their business customers) which will have the ability to quickly process satellite data into nitrogen fertiliser application maps.

You will work closely with the sponsoring Leicester based SME and University of Leicester. Supervision will be provided by Prof. Tanya Vladimirova and Prof. Mike Warrington. The one year MPhil will start as soon as possible. For enquiries please contact Prof. Tanya Vladimirova, email: tv29@le.ac.uk.
Qualifications:
- Bachelor Degree with at least a UK 2:1 in **Electronic or Computer Engineering**.
- University **English language** requirements apply.

Skills:
- A very good working knowledge and previous experience in C language programming
- A very good working knowledge and previous experience in modelling with Matlab / Simulink
- Ability to build strong working relationships with core stakeholders (academics, sponsoring SME, and third sector organisations).
- Business engagement/development skills and aptitude.
- Effective English oral and written skills in order to communicate effectively.
- A self-starter who is able to work as part of a team.

How to apply

Please apply using the [online application system](#).
Apply for: Campus Based Full Time / Engineering Research

- In the **funding section** of the application, please select **Studentship** and in the dropdown menu, select **ERDF MPhil project**.

- In the **Personal Statement** section - please indicate clearly why you are interested in undertaking this research project and why you are the best candidate to help deliver the project objectives.

- In the **Research Proposal Section** please state: **Applying for MPhil Project Ref: LIH014 no proposal required.**

Shortlisted applicants will be invited to an interview with the academics and the sponsoring SME. Interviews are expected to be held within 14 days of the application deadline.

Open until filled

The Leicester Innovation Hub is part-funded by European Regional Development Fund (ERDF).

To qualify for fully funded support the SME, MPhil student and University of Leicester academics must fulfil all ERDF and University MPhil degree eligibility criteria which include:

- The MPhil student: **must be a UK or EU (European Union) national**; have graduated within the last 3 years in a related discipline; adhere to project confidentiality; at the start of the project assign any arising IP from the project; base their MPhil degree thesis on the research outcomes of the project; work closely with the SME company to undertake the research project; deliver monthly progress reports and a comprehensive project report to the University and sponsoring SME in addition to the MPhil thesis. Please note that University of Leicester requires at Bachelor Degree with at least a UK 2:1 or equivalent.

- Each SME project will be delivered by one full-time MPhil student over one year; the MPhil project will have a research focus and will be supervised by two University of

Leicester Innovation Hub is part funded by European Regional Development Fund and the University of Leicester
Leicester academics (1 day a week each; academics are required to complete timesheets).

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<th>Who pays?</th>
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<td>• The University of Leicester pays a monthly stipend of £1,166.67 (total Stipend £14,000) in arrears to the student. The funding will be strictly limited to 12 months.</td>
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<td>• The SME pays the University’s 1 year full-time MPhil fees (upfront before project start).</td>
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<th>Times Scales</th>
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<td>• This one year MPhil project will start as soon as possible.</td>
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<td>• The MPhil projects will last a minimum of one year full-time.</td>
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<th>Further Information</th>
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<tr>
<td>For informal enquiries about technical aspects of this Industrial MPhil please contact Prof Tanya Vladimirova (<a href="mailto:tv29@leicester.ac.uk">tv29@leicester.ac.uk</a>).</td>
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<td>Contact Jenny Hollis (<a href="mailto:jhh74@leicester.ac.uk">jhh74@leicester.ac.uk</a>) for more information about the Leicester Innovation Hub.</td>
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