



**UNIVERSITY OF LINCOLN  
JOB DESCRIPTION**

<b>JOB TITLE</b>	Research Fellow in Artificial Intelligence for Long-term Autonomy				
<b>DEPARTMENT</b>	Computer Science				
<b>LOCATION</b>	Brayford Campus				
<b>JOB NUMBER</b>	COS670	<b>GRADE</b>	7	<b>DATE</b>	July 2019
<b>REPORTS TO</b>	Professor of Robotics & Autonomous System				

**CONTEXT**

The position is externally funded by the Horizon 2020-funded Research and Innovation Action project "ILIAD – Intra-Logistics with Integrated Automatic Deployment: safe and scalable fleets in shared spaces". The project aims to enable automatic deployment of a fleet of autonomous forklift trucks, which will continuously optimise its performance over time by learning from collected data. The University of Lincoln's contributions to the project will include ensuring long-term operation of the ILIAD system, maintaining its environment representations over time while learning and predicting activity patterns of human co-workers; developing qualitative models for human-robot spatial interaction; systems architecture development and systems integration; and managing experimental work at test facilities, including the University's National Centre for Food Manufacturing.

**JOB PURPOSE**

The Research Fellow is responsible for conducting research on the project, as directed by the Principal Investigator, and is expected to operate with a significant degree of autonomy.

The post holder may be required to help supervise the work of more junior researchers.

## KEY RESPONSIBILITIES

<b>Literature Surveys</b>
Undertake literature surveys and other investigations of the state-of-the-art, and prepare reports as required.
<b>Programme of Research</b>
Design and undertake programme of research under the direction of the Principal Investigator, demonstrating a significant level of autonomy.  Lead in the production of high quality research outputs, including reports, papers and other publications of national/international standing.
<b>Project Management</b>
Perform project management activities, planning, scheduling, monitoring and reporting on progress of research projects.
<b>Liaison and Networking</b>
Identify and liaise with internal and external collaborators, and with colleagues in the Department, maintaining positive and effective working relationships.
<b>Internal Research Activities</b>
Participate in and help to organise internal research activities, including seminars, research meetings and conferences.
<b>Continuous Professional Development</b>
Undertake continuous professional development activities.
<b>Grant Applications</b>
Contribute to the production of grant applications.
<b>Teaching Support</b>
Aid in the supervision of postgraduate research students.

**In addition to the above, undertake such duties as may reasonably be requested and that are commensurate with the nature and grade of the post.**

## ADDITIONAL INFORMATION

### Scope and dimensions of the role

The postholder will be expected to design, conduct and manage original research in the area of the project, which encompasses underpinning research topics including (but not limited to):

- AI methods for long-term robot autonomy;
- Persistent mapping and navigation;
- 3D perception and semantic mapping;
- Human activity monitoring and prediction;
- Machine learning for autonomous robots;
- Systems integration, including ROS.

Candidates should have, or expect to soon obtain, a PhD in a relevant area. They must have excellent mathematical and coding skills (C++/Python, ROS). Postdoctoral positions will be fixed term up to the project end date of 31<sup>st</sup> December 2020. The role offers the opportunity to engage in international collaboration within an ambitious team, to work with state-of-the-art robotic hardware and software, and to benefit from excellent support to produce and disseminate original research contributions at the leading international conferences and journals.

### Key working relationships/networks

Internal	External
<ul style="list-style-type: none"><li>• Principal Investigator</li><li>• Head of Research Centre</li><li>• Head of School</li><li>• Other research and academic staff within the school</li></ul>	<ul style="list-style-type: none"><li>• Research collaborators</li><li>• Sponsors and clients</li></ul>



**UNIVERSITY OF LINCOLN  
PERSON SPECIFICATION**

<b>JOB TITLE</b>	Research Fellow	<b>JOB NUMBER</b>	COS670
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<b>Selection Criteria</b>	<b>Essential (E) or Desirable (D)</b>	<b>Where Evidenced Application (A) Interview (I) Presentation (P) References (R)</b>
<b>Qualifications:</b>		
PhD or equivalent (good candidates may be accepted with a PhD pending, subject to publication record)	<b>E</b>	<b>A</b>
Extensive knowledge specific to project/area	<b>E</b>	<b>A/I</b>
<b>Experience:</b>		
Extensive experience of relevant research methods	<b>E</b>	<b>A/I</b>
Authorship of research outputs of national/international standing	<b>E</b>	<b>A/I</b>
Experience of research in specific project area	<b>E</b>	<b>A/I</b>
Teaching support	<b>D</b>	<b>A/I</b>
<b>Skills and Knowledge:</b>		
Ability to design, conduct and project manage original research in the subject area	<b>E</b>	<b>A/I</b>
Excellent written communication, including the ability to write reports and research outputs	<b>E</b>	<b>A/I</b>
Ability to prioritise own workload and work to specified deadlines under pressure	<b>E</b>	<b>A/I</b>
Ability to communicate complex subjects orally	<b>E</b>	<b>A/I</b>
Skills specific to project/area	<b>E</b>	<b>A/I</b>
<b>Competencies and Personal Attributes:</b>		
Flexible approach to workload	<b>E</b>	<b>I</b>
Ability to work on own and as part of a team	<b>E</b>	<b>I</b>
Enthusiasm and commitment	<b>E</b>	<b>I</b>

**Essential Requirements** are those, without which, a candidate would not be able to do the job. **Desirable Requirements** are those which would be useful for the post holder to possess and will be considered when more than one applicant meets the essential requirements.

<b>Author</b>	Tom Duckett	<b>HRBP</b>	SP
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