UNIVERSITY OF LINCOLN
JOB DESCRIPTION

JOB TITLE	Research Associate on Novel Active Vision And Picking Head To Robotically Harvest Soft Fruit (FASTPICK)
DEPARTMENT	Lincoln Institute for Agri-Food Technology
LOCATION	Riseholme

JOB NUMBER	COS812	**GRADE**	7	**DATE**	Feb 2021

REPORTS TO	Dr Amir Ghalamzan Esfahani

CONTEXT

The University of Lincoln is seeking to appoint a new Research Associate to join a project. The FASTPICK will develop a state of the art active and dynamic vision system that uses multiple RGB-D cameras to perform visual servoing to create a 3D scene of complex clusters and to identify critical picking points for the gripper. This is a unique opportunity to continue the past works at University of Lincoln on Selective Harvesting of Strawberry and to test our developed technology in semi-commercial workspaces at Riseholme campus of University of Lincoln.

JOB PURPOSE

The University of Lincoln is seeking to appoint a new Research Associate to join a project. The FASTPICK will develop a state of the art active and dynamic vision system that uses multiple RGB-D cameras to perform visual servoing to create a 3D scene of complex clusters and to identify critical picking points for the gripper. This is a unique opportunity to continue the past works at University of Lincoln on Selective Harvesting of Strawberry and to test our developed technology in semi-commercial workspaces at Riseholme campus of University of Lincoln. We will use a state-of-the-art mobile robot developed jointly by Norway University of Science, Saga Robotics and the University of Lincoln as well as a few manipulators, e.g. Panda robot manufactured by Franka Emika and Scara arm developed by Saga Robotics. This project is part an Innovate UK project in collaboration with Saga Robotics to deliver reliable solution for strawberry picking.
We are looking to recruit a postdoctoral Research Fellow with relevant experience and/or a strong interest/background in the following research areas:

- Robot Vision (working with RGB-D sensors for dynamic 3-D scene reconstruction),
- robot grasping and manipulation,
- motion planning,
- system integration, including ROS.

The Research Associate is responsible for development of the system, demonstrating the system on semi-commercial strawberry polytunnel and 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

Literature Surveys

Undertake literature surveys and other investigations of the state-of-the-art, and prepare reports as required.

Programme of Research

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.

Project Management

Perform project management activities, planning, scheduling, monitoring and reporting on progress of research projects.

Liaison and Networking

Identify and liaise with internal and external collaborators, and with colleagues in the Department, maintaining positive and effective working relationships.

Internal Research Activities

Participate in and help to organise internal research activities, including seminars, research meetings and conferences.

Continuous Professional Development

Undertake continuous professional development activities.

Grant Applications

Contribute to the production of grant applications.

Teaching Support

Engage in teaching support activities, up to a maximum of six hours per week, possibly including leading a small number of units (no more than two per annum).

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
Applicants should have, or expect to soon obtain, a PhD (or equivalent) in a relevant area. You must have excellent mathematical and coding skills (C++/Python, ROS, PCL, OpenCV). The post offers the opportunity to work with state-of-the-art robotic hardware and software, and to benefit from excellent support to produce and disseminate original research contributions in the leading international conferences and journals.

Key working relationships/networks	
Internal	**External**
- Principal Investigator - Head of Research Centre - Head of School - Other research and academic staff within the school	- Research collaborators - Sponsors and clients

UNIVERSITY OF LINCOLN
PERSON SPECIFICATION

JOB TITLE	Research Associate	JOB NUMBER	COS812

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

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.

Author		HRBA	