



Role Profile

Job Title: Research Associate/Fellow

School/Department: Biosciences/ Computer Science

Job Family and Level: Research & Teaching 4CTG / RT4

Contract Status: Fixed-term contract until 30 November 2019.

Hours of Work: Full-time (36.25 hours per week). Applications for job share will also be accepted.

Location: **Sutton Bonington Campus/Jubilee Campus,** University of Nottingham, Nottingham.

Reporting to: **Dr. Andrew French,** Dr. Anthony Bishopp

Purpose of the New Role:

This project will develop image analysis (including machine learning approaches), working with cutting edge light sheet microscopy datasets acquired by biologists working on the project at the University of Nottingham.

The candidate should have or be near to completing a PhD in image analysis or a machine learning-related subject. The ability to work in an interdisciplinary team will be essential. The ability to develop new CNN models/architectures, as well as use existing architectures, will be required. The candidate will be based at the University of Nottingham.

	Main Responsibilities	% time per year
1.	Review current approaches to light sheet dataset analysis with specific focus on plant-focused datasets	5 %
	Develop image analysis and machine learning approaches to identify relevant features in the lightsheet data. This will likely include CNN-based deep learning architectures and approaches, and potentially working with volumetric data, and data over time.	50 %
2.	Design studies alongside the biologists on the team to evaluate the software techniques	5 %
3.	Develop existing annotation tools to allow easier and faster annotation of data from the biologists on the team	10%
4.	Build any user interfaces and associated tools needed to allow the use of the new algorithms by biologists	15%
5.	Create and curate the image and data sets arising from the project, ensuring that all relevant meta-data is captured and logged.	5%
6.	Attend project meetings, conferences etc. as required by the role. Prepare papers and presentations in support of these events.	10%

Knowledge, Skills, Qualifications & Experience

	Essential	Desirable
Qualifications/ Education	<ul style="list-style-type: none"> PhD, or close to completion of PhD, in image analysis, machine learning, or related field 	

	<ul style="list-style-type: none"> • BSc in Computer Science or related discipline 	
Skills/Training	<ul style="list-style-type: none"> • Strong programming skills • Strong verbal and written communication skills 	<ul style="list-style-type: none"> • Familiarity with plant phenotyping as a research area • Keenness to work with plant biologists to help develop the required techniques. • Understanding of microscopy datasets
Experience	<ul style="list-style-type: none"> • Experience of building software tools for use by scientists • Practical experience of machine learning methods 	<ul style="list-style-type: none"> • Developing image analysis approaches • Working with image datasets • Experience with using deep learning approaches • Experience of interdisciplinary work • Experience of experimental evaluation of research results
Statutory/Legal	<ul style="list-style-type: none"> • Legal right to work within the UK 	



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