University of Nottingham
UK | CHINA | MALAYSIA

Role profile

Job title	Research Fellow in Digital Agriculture	Job family and level	R and T Level 4a/4 RCTG
School/ Department	School of Biosciences/ Agricultural and Environmental Sciences	Location	Sutton Bonington Campus

Purpose of role

You will support cutting-edge research tackling sustainability challenges in UK and global agriculture through applied innovation with leading businesses and farmers. You will develop AI, machine learning and digital modelling approaches, including digital twin prototypes, to support sustainable perennial crop production. Working across multiple projects, you will collaborate with leading agricultural sustainability researchers at the University of Nottingham and industry partners to develop and test innovative solutions in real-world settings. You will build strong industry connections, enabling knowledge exchange and co-development of approaches that enhance agricultural resilience, productivity and environmental outcomes, while expanding your technical expertise and professional networks.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	**Model development** ▪ Develop AI and machine learning models to support sustainable perennial crop production. ▪ Develop digital twin prototype(s) that integrate environmental, crop and management data to simulate and predict agricultural system outcomes. ▪ Integrate and analyse diverse datasets, using statistical, machine learning and process-based modelling approaches to identify relationships and improve model performance. ▪ Test, validate and refine models using real-world agricultural data, working with researchers and industry partners to ensure their relevance and practical application.	80%
2	**Communication** ▪ Report (as required) to the CSAS and FSI Directors (Dr Nick Girkin, Dr Hannah Cooper, Dr Peter Noy), and other key researchers (Prof Leah Band) ▪ Support agribusiness engagement workshops (in person, and online) and broader business development based on project outputs ▪ Prepare data summaries for industry partners	10%

3	**Personal and Institutional Development** ▪ Develop personal training needs document and engage with appropriate training activities	10%

Person specification

	Essential	Desirable
Skills	▪ Ability to develop and apply AI and machine learning models, including predictive modelling ▪ Strong quantitative, statistical and data analysis skills, including handling large and diverse datasets. ▪ Proficiency in Python, R or equivalent programming languages.	▪ Experience of relevant mechanistic plant and soil models ▪ Ability to integrate machine learning with process-based or mechanistic models. ▪ Ability to visualise and communicate complex model outputs and data effectively.
Knowledge and experience	▪ Experience applying modelling or data-driven approaches to real-world research or applied problems. ▪ Knowledge of a range of AI approaches, including generative AI, large language models or other foundation models. ▪ Ability to design, test, validate and refine models using empirical data. ▪ Ability to work collaboratively with researchers and external partners to develop practical modelling solutions.	▪ Knowledge of agricultural systems and sustainability challenges. ▪ Experience working with environmental, agricultural or other spatial/temporal datasets. ▪ Experience of working with industry partners or end-users to co-develop digital tools or decision-support approaches
Qualifications, certification and training (relevant to role)	▪ Undergraduate degree in a relevant discipline ▪ PhD (completed or near-completed) in a relevant discipline	▪ Training or certification in machine learning, AI, data science or related areas.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

Valuing people	Is friendly, engaging and receptive, putting others at ease. Actively listens to others and goes out of way to ensure people feel valued, developed and supported.
Taking ownership	Is clear on what needs to be done encouraging others to take ownership. Takes action when required, being mindful of important aspects such as Health & Safety, Equality, Diversity & Inclusion, and other considerations.
Forward thinking	Drives the development, sharing and implementation of new ideas and improvements to support strategic objectives. Engages others in the improvement process.
Professional pride	Is professional in approach and style, setting an example to others; strives to demonstrate excellence through development of self, others and effective working practices.
Always inclusive	Builds effective working relationships, recognising and including the contribution of others; promotes inclusion and inclusive practices within own work area.

Key relationships with others

