

Research Fellow (High-Throughput Plant Phenotyping)

Job description

The Nanyang Technological University School of Materials Science and Engineering (NTU MSE) is looking for a highly motivated and experienced candidate to join us as **Research Fellow (RF)**. The RF will join in a cutting-edge interdisciplinary research project funded by Singapore National Research Foundation (NRF). The research project is a joint project of HUJI (Hebrew University of Jerusalem) and NTU (Nanyang Technological University) aiming to develop a replicable, data-centered, autonomous, sustainable, intelligent, computational urban farming system for whole-plant yield optimization.

In this multidisciplinary project, a unique multimodal indoors remote sensing high-throughput plant phenotyping (HTTP) system is incorporated with whole plant and environmental sensing system all data is to be fused and analyzed with AI techniques to optimize yield of indoor crops under solid and hydroponic substrates. The successful candidate will take part in developing and starting the data collection from this unique HTTP system and should be a constructive team member while maintaining independent research.

Key responsibilities

- Operating a LemnaTec indoors HTTP system and pre-processing in LemnaTec environment (C-Sharp)
- Remotely sensed data fusion and analysis with PlantDitech information (including plant, soil/substrate as well as environmental information)
- Assist in the daily operation of compu-farm and control farm when needed.
- Ensure compliance with health and safety in all aspects of the research work
- Supervise junior research staff, undergraduate and graduate student projects
- Manage logistical issues and laboratory inventory
- Coordinate collaborative work within multidisciplinary team and external collaborators
- Generate periodic progress report as required by funding agency
- Disseminate research results in high quality peer-reviewed journals and/or international conference.

Requirements

- PhD degree in biological engineering systems, agricultural engineering, remote sensing, electronic engineering or related fields
- Experience with high-throughput phenotyping system (e.g., LemnaTec) preferred
- Experience with plant hyperspectral imaging, RGB, thermal imaging preferred
- Excellent programming skills (e.g., Python) and statistical data analysis
- Experience with machine learning (e.g., PLS, GP, NN)
- A track record of research ability and demonstrated contribution to research (e.g., research publications, grant applications, patents) required
- Excellent knowledge in English
- Good communication and writing skills
- Good coordination/project management skills
- Able to plan and execute experiments with minimal supervision
- Able to take initiative to improve processes and troubleshoot problems
- Able to organize well and adhere to deadlines

About NTU MSE

This post is within the School of Materials Science and Engineering, a world leader in materials engineering studies. The school has been ranked 1st in the world for the fourth year in a row in the latest results released by the U.S. News Best Global Universities Ranking 2021 and 1st by subject in Materials Science, according to 2021 Quacquarelli Symonds (QS) World University Subject Rankings.