



## Faculty of Agricultural and Food Sciences

### PhD position in Developing Weed Mapping and Decision Support Tools for Sustainable Weed Management

The Faculty of Agricultural & Food Science (FAFS) has a long history of discovery and innovation that has contributed to a reputation of excellence in research at the University of Manitoba. Research is the foundation for faculty expertise that permits the Faculty to distinguish itself in teaching and provides informed and sound outreach, particularly for the agriculture sector in Manitoba, but increasingly to global agro-food and nutrition/wellness communities. The faculty maintains a balance between applied and basic research, with research support per capita second to none at the University of Manitoba. The applied research, supported primarily by industry, allows the integrated application of existing science and technologies to address industry and society's emerging complex challenges. However, it can only be sustained long-term with the creative insights and innovative tools generated from discovery-driven programs.

Since FAFS aims to revolutionize agricultural practices through technology, we invite applications for a new PhD position in remote sensing and computer vision dedicated to weed detection and mapping in agricultural systems. We're seeking an academically excellent candidate who shares our commitment to science and technology.

#### **Duties:**

- Develop novel computer vision methods to identify and quantify weeds and crops.
- Integrate remote sensing data such as multispectral imaging and LiDAR to enhance methods for precision weed mapping.
- Conduct field surveys, drone flights, spectral lab testing, and image analysis using open-source programming languages (e.g., R and Python)
- Work together in a diverse team with international agri-tech professionals.
- Publish your research in academic journals and at international conferences.

#### **Qualifications:**

- A Master's degree or equivalent in a relevant field of research in agriculture or/and computer science; A strong foundation in ML algorithm development is desirable.
- Previous weed science experience is desired but not required.
- Familiarity with Python libraries like TensorFlow and PyTorch or R is highly desirable.
- Demonstrated experience with image classification, spatial data analysis, and remote sensing technology.
- A proactive approach to problem-solving and a desire to make a positive environmental impact.
- Strong communication skills (oral and written) in English.

**Apply:**

If you're ready to be part of a ground-breaking research project, please apply for this PhD position today by sending the following as **one PDF file** before December 15<sup>th</sup>, 2023.

- 1- CV
- 2- Transcript
- 3- A statement of research interest and how they fit into this project.

**Submit to** [digital.weedscience@gmail.com](mailto:digital.weedscience@gmail.com) ; **subject:** PHD\_WEED\_LASTNAME

If you have any questions about this opportunity, please contact Dr. Nasem Badreldin  
([nasem\[dot\]badreldin\[at\]umanitoba.ca](mailto:nasem[dot]badreldin[at]umanitoba.ca))

Please note that we can only contact short-listed candidates for the position due to the high number of applications we receive.

FASF is deeply invested in creating a diverse and inclusive academic community. We strongly encourage applications from individuals who will contribute to the diversity of our university, including women, racial and ethnic minorities, persons with disabilities, and veterans.