August 24, 2022

Call for Applications (M.S. and Ph.D. positions)

The Department of Biosystems Engineering (BSEN) at Auburn University is seeking applications for M.S. and Ph.D. Graduate Research Assistant positions to conduct innovative research in smart horticultural systems engineering.

Program start time: Spring, Summer or Fall 2023.

Research: In addition to fulfilling the degree requirements of Biosystems Engineering program, the successful candidate will be responsible for conducting research in a timely manner in one of the following areas:

- *Smart Horticulture*: Developing and deploying innovative sensing tools, computer vision techniques, robust data mining algorithms, high precision smart control systems, robotics and automation methods to minimize the labor cost, management implications and enhance production resilience. Possible applications include fruit, vegetable, nursery, landscape and greenhouse production systems.
- *Controlled Environment Agriculture*: Selection, development and integration of multi-modal sensing suite to collect the data related to spatial, temporal and compositional heterogeneity of microclimate and plant stress signals. The extracted data will be used for early detection and intervention to achieve better outcomes in crop production.
- *AI-enabled decision Analysis:* Robust, data-centric machine learning/deep learning pipelines to systematically analyze the heterogeneous multi-modal, multi-temporal, multi-resolution and multi-scale data for unleashing the horticultural/agricultural production potentials.

Requirements: The candidate are expected to have:

- A B.S. or M.S. degree in Biosystems/ Biological/ Agricultural Engineering or in closely related engineering areas by the expected start date.

- A minimum GPA of 3.0.
- International applicants must score at least 550 on the Test of English as a Foreign Language (TOEFL) paper version (pBT), 213 on the computer version (cBT), and 79 on the internet version (iBT). Additionally, successful applicants must score minimums of 16 on the listening, reading, speaking, and writing components of the iBT. Auburn University's ETS institution code is 1005. Auburn will also accept a 6.5 on the International English Language Testing System (IELTS) exam. Check the graduate school website for latest guidelines (http://graduate.auburn.edu/prospective-students/general-admission-requirements/).

- GRE test scores (highly encouraged but not mandatory).
- Strong written/oral English capabilities.
- A strong academic record.
- Experience in one or more of the following items:
    - Strong programming background in any of Python, Matlab, C/C++/C# and/or R.
    - Optical sensors such as RGB, multispectral, hyperspectral, thermal, fluorescent or LiDAR devices.
    - Image processing/computer vision, feature engineering or data mining algorithms.
    - Statistical machine learning, data analysis, artificial intelligence or deep learning.
    - Experience related to control theory, robotics or automation.
    - Edge/cloud computing or Linux/Unix based programming experience.
    - Instrumentation or circuit design.
    - Web or mobile app development.
    - CAD design and 3D printing.

How to apply: To apply, please send an email with the subject line "PhD Application - Your full name" or "MS Application - Your full name" to Tanzeel Rehman at tur0001@auburn.edu and include a single PDF (named "PhD_Application_yourlastname") with the following included:

- Statement of purpose (maximum 2 pages).
- A CV that includes your education, research background, related skills, and publications.
- University transcripts (unofficial).
- Test scores including English proficiency (for international candidates) and GRE.
- If desired or applicable, you may include a copy of a relevant scientific publication.

Potential of fellowships: At Auburn University, the students will have opportunities to apply for various fellowships. Please see the link to explore further (https://www.eng.auburn.edu/future-students/graduate/fellowship-program/index.html).