ARTIFICIAL INTELLIGENCE FOR FIELD AND AGRICULTURAL ROBOTICS

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DESCRIPTION

Currently, farming industry primarily depends on the efficient use of natural resources, for instance, water, land, nutrition, and other biochemicals, to produce the elementary supplies of human survival, including food fibre, feed raw foodstuff, and fuel. The rapid growth of population, urbanization, and varying demand for food consumption habits puts constant pressure on the agriculture sector to meet the massive demand for a growing community. Despite various climatic challenges and limited natural resources like land and water and scarcity of skilled labor, the agricultural field can satisfy the increasing demand for food necessity by introducing Artificial Intelligence for Field and Agricultural Robotics. Artificial Intelligence and Agricultural Robotics will lead to a significant transformation in the agriculture field in the coming decades. Artificial Intelligence (AI) methods are used extensively in food, agriculture, and bio-system industries to resolve a diversified issue with optimal production and processing operation solutions. Agricultural robotics work as human operators that perform all social, operational behaviors like perception and cognitive manipulation to accomplish tasks and processes with or without humanoid supervision in agricultural sceneries. Such robotic automation has a great potential to lessen labor work and increase the accuracy and productivity of food production, improving farm productivity, and the long-term sustainability of the farming industry.

Further, accomplishing Artificial Intelligence in Field and Agricultural Robotics will promote a deep understanding of the agricultural and farming industry's technical and conceptual issues and facilitate the inclusion of current farming and field robotics innovations. The main objective of this special issue is to enable efficient, safe, and economical food production and to advances the research in state-of-the-art technology based on the Internet of Things (IoT), artificial intelligence, big data analysis, and robotics to enhance mobility, sensing capability, operation manipulation, and management operation in field and agricultural industry.

This special issue welcomes unique research articles that explore novel ideas and emergent innovation that address the introduction of artificial intelligence and automation robotics in the agricultural industry to improve agronomic tactics. Potential researchers and academicians invited
to submit their original and innovative idea-based research proposal through this Special Issue.

The topic of interest includes the following:

- AI and IoT based Sensing network for state-of-art awareness in field and agricultural applications.
- Machine Learning-based control tactics for manipulation of robotic activities in the agriculture industry.
- Programmatical supervision of agriculture field using agricultural robotic vehicle-based AI techniques in agriculture fields.
- Application of aerial robots for monitoring crop production in agricultural farms.
- Deep learning-based field and agricultural robotics for enhancing row crop production.
- Greenhouse management and vertical farming by integrating computer intelligent machinery and algorithm in the agriculture field.
- Supervision, control, and management of Livestock using computational intelligence-based Field Robots.
- Analyse the maturity of crop production using artificial intelligence techniques in agriculture
- A study on the applications and supervision of AI-based agricultural robots
- Machine learning for controlling and managing agriculture robotics.
- Economic analysis of food production based on agriculture robotics using a deep learning algorithm.
- Artificial Intelligence-based decision-making systems for the selection of seed for diverse soil and weather conditions
- Optimization of the agricultural task using robotic automation.
- Applications based on smart agriculture with AI integrated robotics.
- Application of Computationally intelligent robotics in food, agriculture, and bio-systems

**IMPORTANT DATES**

Submission of manuscript deadline: **June 1, 2021**  
First round peer review: **August 1, 2021**  
Revised version due: **September 30, 2021**  
Final notifications: **December 05, 2021**