

DBT - AIST International Laboratory for Advanced Biomedicine

DAILAB

Classroom for Advanced & Frontier Education CAFE

DAILAB-CAFE

Series - 68

Date & Time: October 18, 2021 (15:30- 16:30 JST)
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Application of AI and Imaging Techniques to Realize High-quality Stable Production in Smart Agriculture

Japanese agriculture faces various problems such as labor shortages, the aging of farmers, the increasing of abandoned cultivated land, and the decreasing in yield and quality due to frequent occurrence of pests and diseases. Smart agriculture powered by artificial intelligence(AI) shows huge potential in solving these problems. AI can provide farmers with real-time insights from their fields, predicting the optimal time for sowing and harvesting and identifying areas that need irrigation, fertilization, or pesticide treatment etc.

In this presentation, I will mainly introduce our research practices of automatic pest and disease detection and plant growth monitoring aiming at labor saving, cost reduction and profitability improvement by utilizing AI and image processing technology in field management. Firstly, I will give you a general introduction of smart agriculture and AI technique. After that, based on the present challenges in agriculture production. I will show how to use AI and image techniques to detect the pests and diseases for protecting crops production and monitoring crop growth state. Moreover, several examples will also be shown to help you understand the development of smart agriculture with AI and imaging techniques. Finally, AI limitations and future potential will be discussed from my point of view.

Introduction of Smart Agriculture & AI



1 超能力・大規模生産を実現
2 作物の能力を最大限に発揮
3 きつい作業、危険な作業から解放
4 誰もが取り組みやすい農業を実現
5 消費者・実需者に安心と信頼を提供

Smart Agriculture
Highly integrated sensing, AI, and robot
technology through open innovation

「スマート農業の実現に向けた研究会」検討結果の中間とりまとめ（平成26年3月28日公表）より
出展：農林水産省HP <http://www.maff.go.jp/j/kanbo/kihyo03/gityo/> 「スマート農業の展開について」

THANK YOU FOR YOUR PARTICIPATION!



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PARTICIPANTS

- KhuranaMallika Organizer
- Archana (Guest) Guest
- AVIRAL KUMAR Outside your organization
- Herman Sunil Dsouza [MAHE-... Outside your organization
- Jishnu P V MAHER001153 Outside your organization
- KAULAshish
- Keshav (Guest) Guest
- kiran kodsara Outside your organization
- Kishore Banik Outside your organization
- KRISHAN... Outside your organization
- NALIYADHARA NIKUNJ KANT... Outside your organization
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- SATHVIK UPADHYA-181700107 Outside your organization
- SHAIENDRA KUMAR GANG... Outside your organization
- Sima (Guest) Guest
- SONAM FATHIMA MEHAK-18... Outside your organization
- Sosmitha Girisa (Guest) Guest
- Sushmitha Srinivasan - 20170...