Organized Session 16

Small Robot and Deep-learning in Agriculture

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Concept of Organized Session

Robotic farm machines have begun to be introduced for the purpose of automating and unmanning farm work in the field. However, there are still many light but long hours of unautomated farm work, as well as unautomated farm work that relies on human judgment, such as discriminating between crops and weeds, and judging the growth of crops.

In this session, lectures will be given on research on deep learning to use machine intelligence instead of human judgment in agricultural work, and on research on small robots that aim to automate agricultural work by combining automatic work and machine intelligence, despite their small size and low work efficiency.

The main topics will be 1) small agricultural robots, 2) electric agricultural robots, 3) application of deep learning to robotic agricultural machinery, and 4) sensing technology for robotic agricultural machinery.

**Keywords:** Small agricultural robot, Electric agricultural robot, Image processing, Sensing technology, Simultaneous localization and mapping (SLAM)