Current Status and Expectations of Artificial Intelligence Enabled Agriculture in Japan

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Is Japan advanced in AI?

・「この数年で日本は発展途上国になった。結構やばい」孫社長がAI分野で指摘 – Japanese engadget

・https://japanese.engadget.com/2019/07/17/ai/

・「都内で開幕したSoftBank World 2019に登壇したソフトバンクグループの孫正義社長は、日本はAI分野で『完全な後進国になっている』と述べ、危機感を示しました。」
The first Deep Learning application for Agriculture in Japan?

- キュウリ農家とディープラーニングをつなぐ TensorFlow
- Google Cloud Platform Japan Blog

[https://cloudplatform-jp.googleblog.com/2016/08/tensorflow_5.html](https://cloudplatform-jp.googleblog.com/2016/08/tensorflow_5.html)
Applied to Imagery Data

- Discrimination of flower, fruit, etc.
- Determination plant disease (under development).
- Automated Harvester.
- Judgement of harvesting time.
- Automatic decoding of waggle dance of honeybees
Other Data?

● Weather Data
  – Historical, forecast
● Physical, Chemical, Biological soil conditions
● Genomic data
● Phenomic data
● Damage data caused by natural disasters
● etc.
World is a Complex System

- Agriculture
- Environmental Issues
  - Climate Change
  - Micro Plastics
  - Conservation of Biodiversity
- Economy
- Energy
Can AI help farmers who have received weather forecasts that natural disasters will occur?

- Drought
- Shortage of water
- Shortage of Sunshine
- Flooding
- Land sliding
- Flash water
- Severe Temperature
Towards framing systems
In Society 5.0 era
The Research Center for Agricultural Information Technology is pursuing research using artificial intelligence (AI) and the agricultural data collaboration platform, to facilitate the realization of smart agriculture, and contribute in the realization of a super-smart society, "Society 5.0", in the field of agriculture and food.

NARO: integrated data platform

- Object Storage
- Ontology system for metadata
- Graph database for analysis
- Web APIs
  - Collecting Data
  - Describing Metadata
  - Providing Data with Metadata
  - etc.
- Under development, Coming Soon?