AI, Ethics, and Standards in Geospatial Big Data

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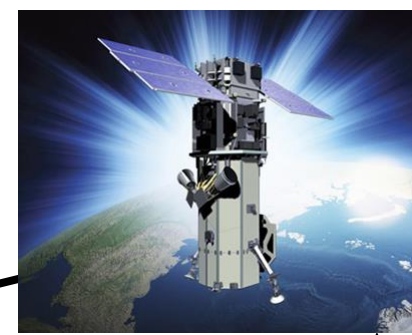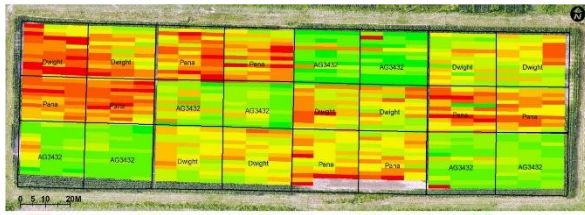
October 2020

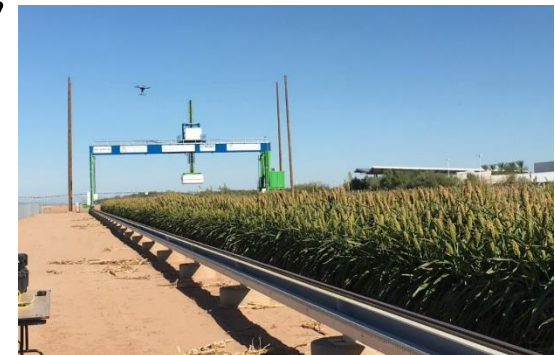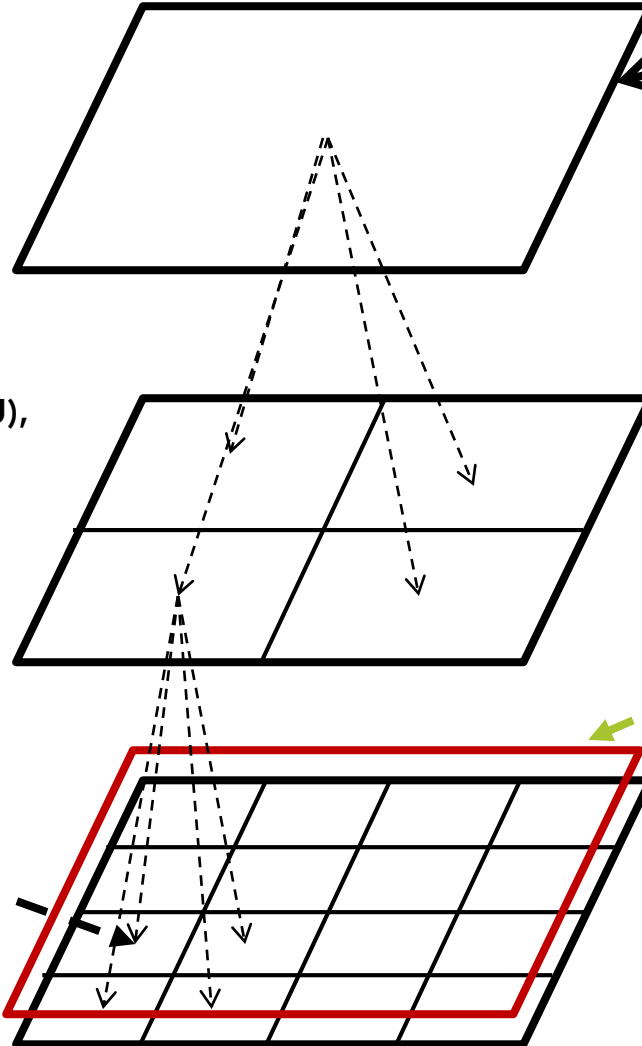**SAINT LOUIS UNIVERSITY™**
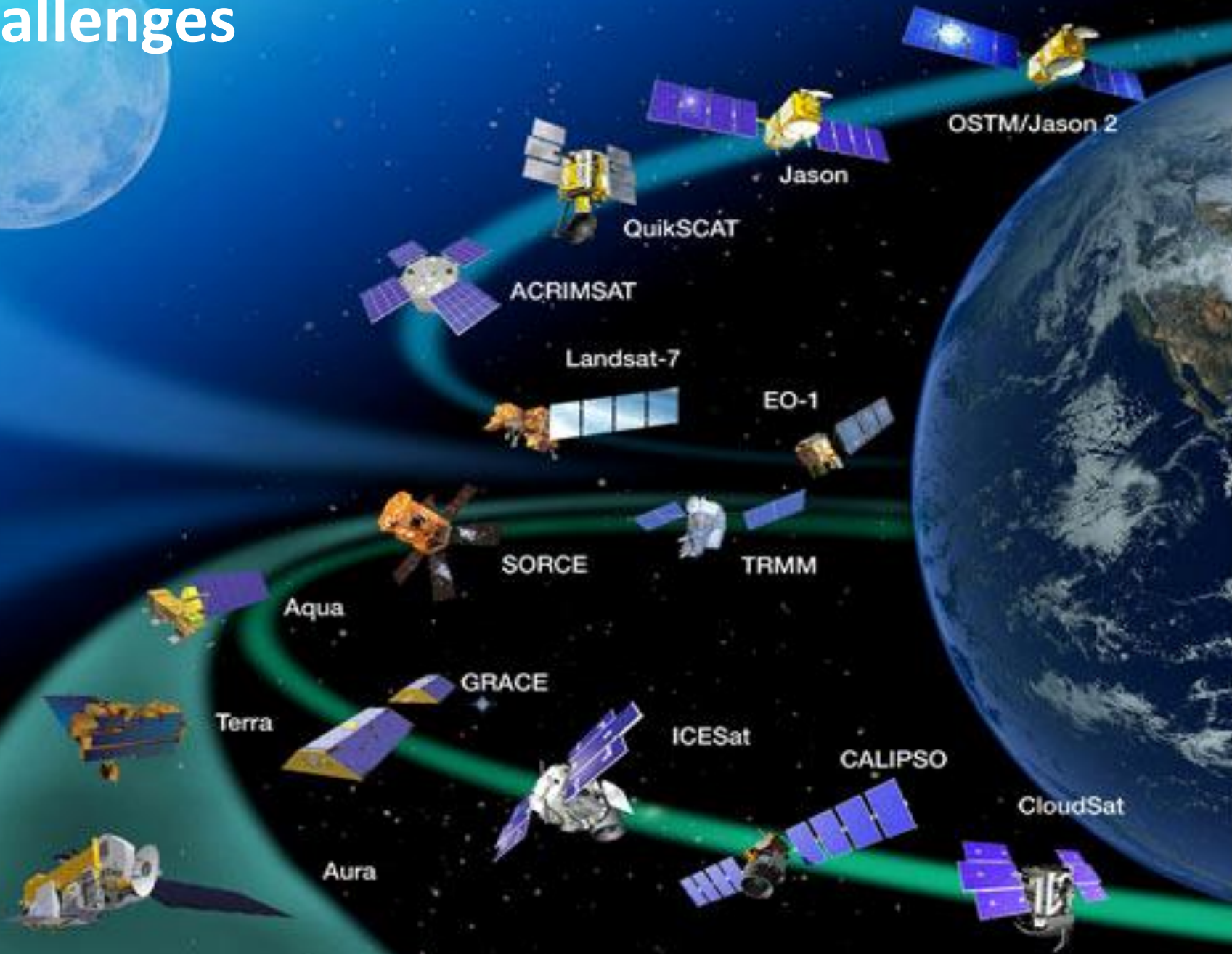Geospatial Institute

Our work

Worlview-2/3,
Landsat, Sentinel
1 m – 30 m

Airborne (UAS, Ball, SLU),
0.2 – 4 m

Field (0.13m res.)

leaf → canopy → airborne → Satellite → global ecosystems

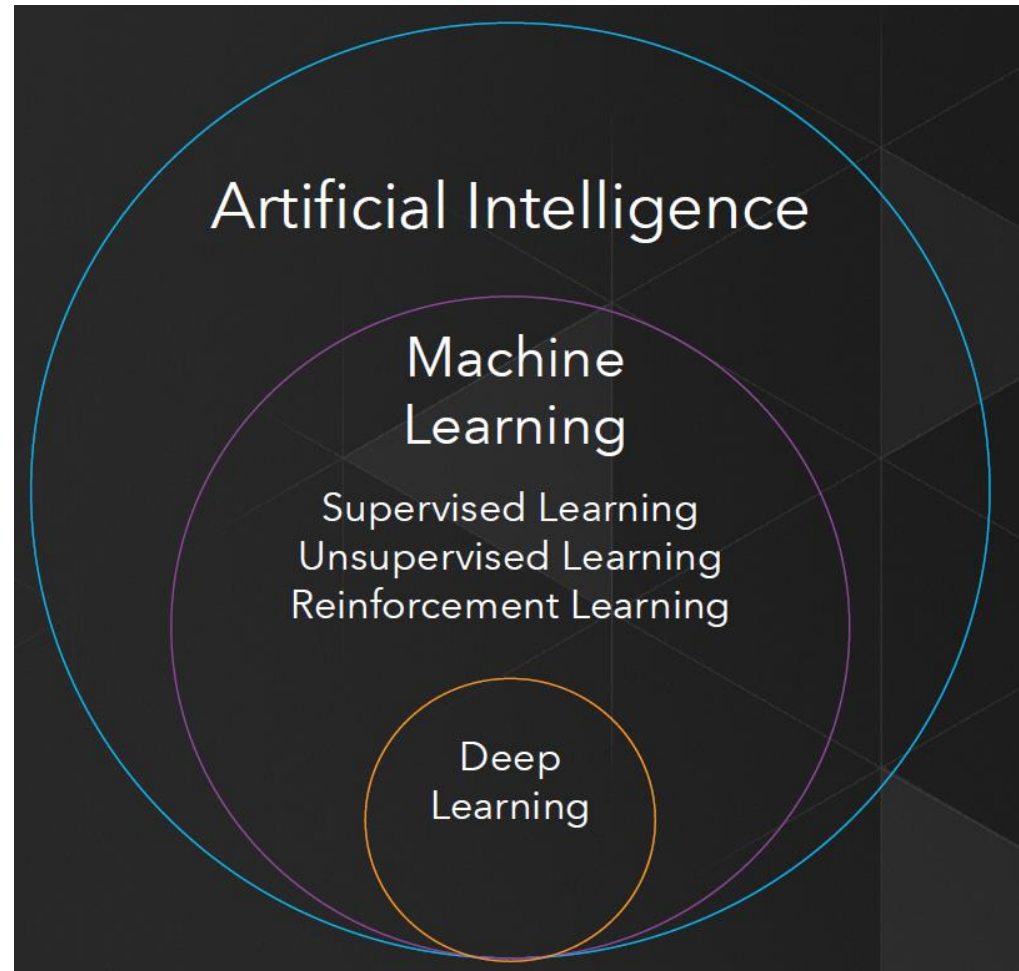|				
< 3200 (kg/ha)	4401 - 5300 (kg/ha)	6001 - 6700 (kg/ha)	7501- 8500 (kg/ha)	> 10000 (kg/ha)
3201 - 4400 (kg/ha)	5301 - 6000 (kg/ha)	6701 - 7500 (kg/ha)	8501 - 10000 (kg/ha)	Plot Boundary

Challenges

Remote Sensing Ecosystem

Machine learning and AI for imagery data

- **Huge potential for geospatial community**
  - **Efficient management of Big data from calibration to applications**
  - **Harnessing big data for generalizing patterns and extracting useful information**
  - **Data driven**
- **Challenges**
  - **Quality check**
  - **Automation**
  - **End-end mapping**
  - **Virtual constellation**

ESRI

Ethics of AI and Big Data

- **How to make sure the quality of the geospatial Big Data coming from various sources?**

- **How to balance the advantage of increased data with the potential for misuse?**

- **Do we have the standards and effective governing policies?**

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