

AI and Satellite Imagery

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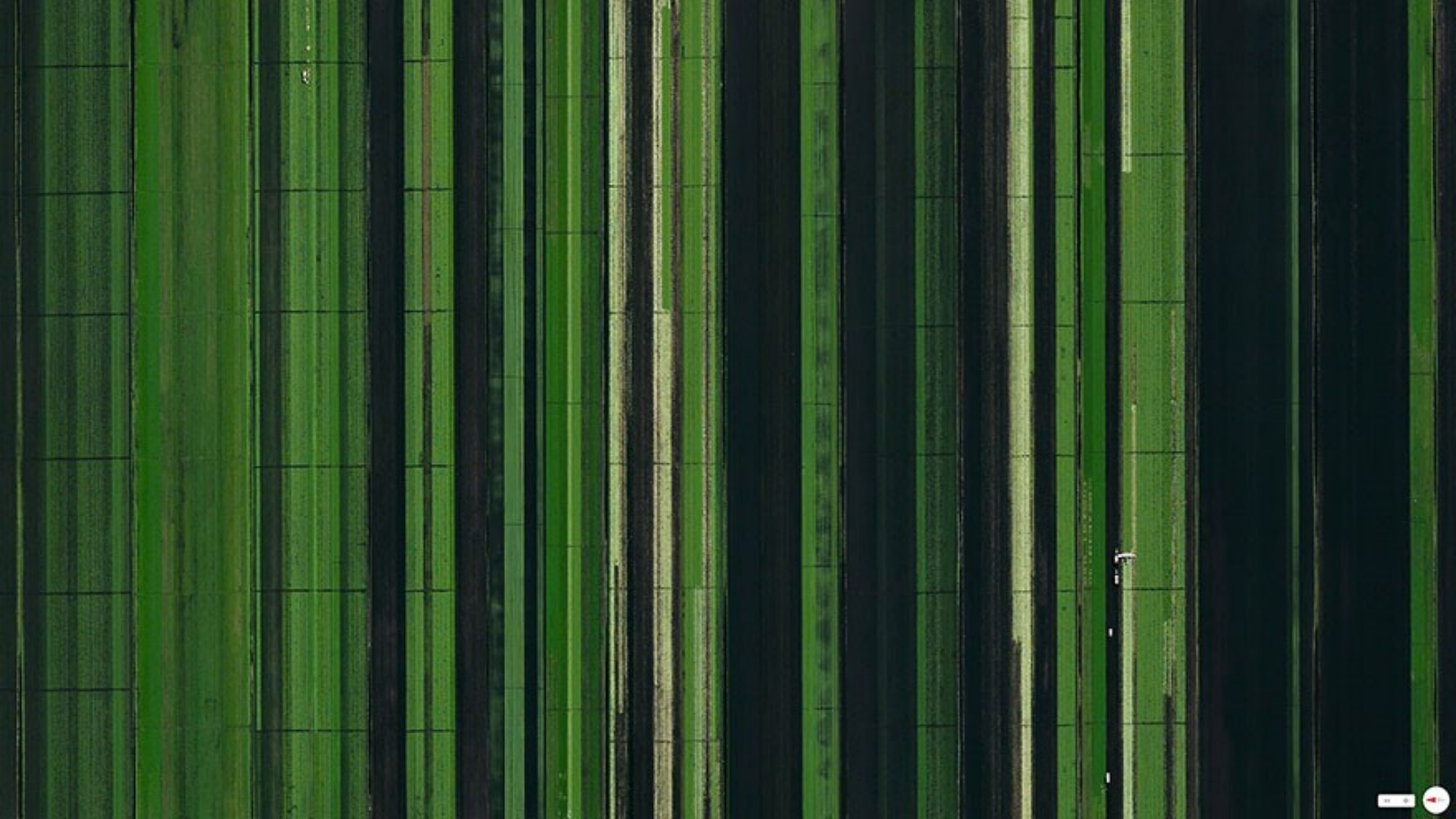
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Can we use AI for Good?

- ❖ We can use our intelligence for good
- ❖ AI dramatically expands scope and scale of human intelligence
- ❖ 20,000 teams from 150 countries showed what's possible
- ❖ Is movie rating prediction the pinnacle of human ambition?

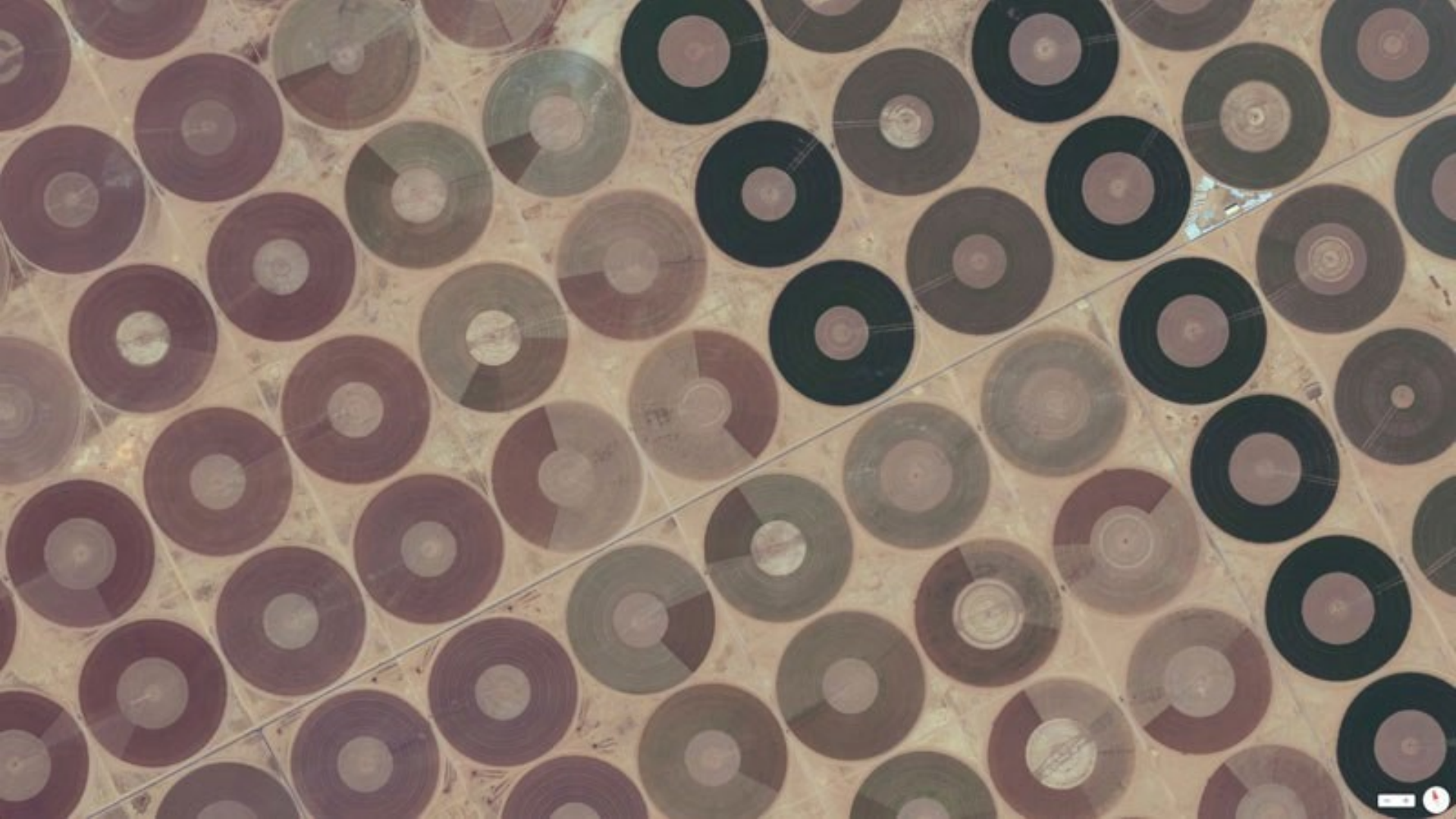
Satellite data and AI

- ❖ Hundreds of imaging satellites
 - ❖ everywhere, every day, ~50cm resolution
 - ❖ 2×10^{15} pixels/day (2 billion 1-megapixel images)
 - ❖ 10,000 TB/day, or ~\$100M/yr for disk storage
- ❖ **Seeing** the whole world at once
 - ❖ A global, real-time database of “everything”
- ❖ A world of extraordinary variety and richness









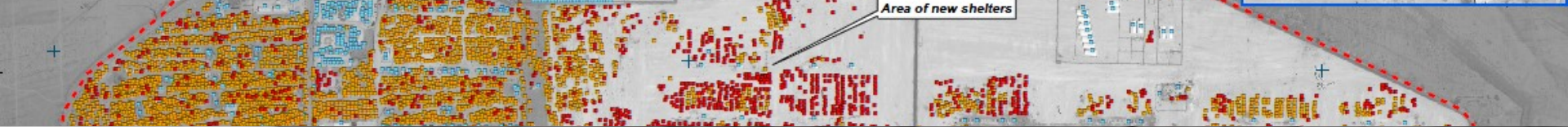


The role of measurement

- ❖ Visualization
- ❖ State estimation, control feedback
- ❖ Understanding the past, predicting the future
- ❖ Learning dynamical system models







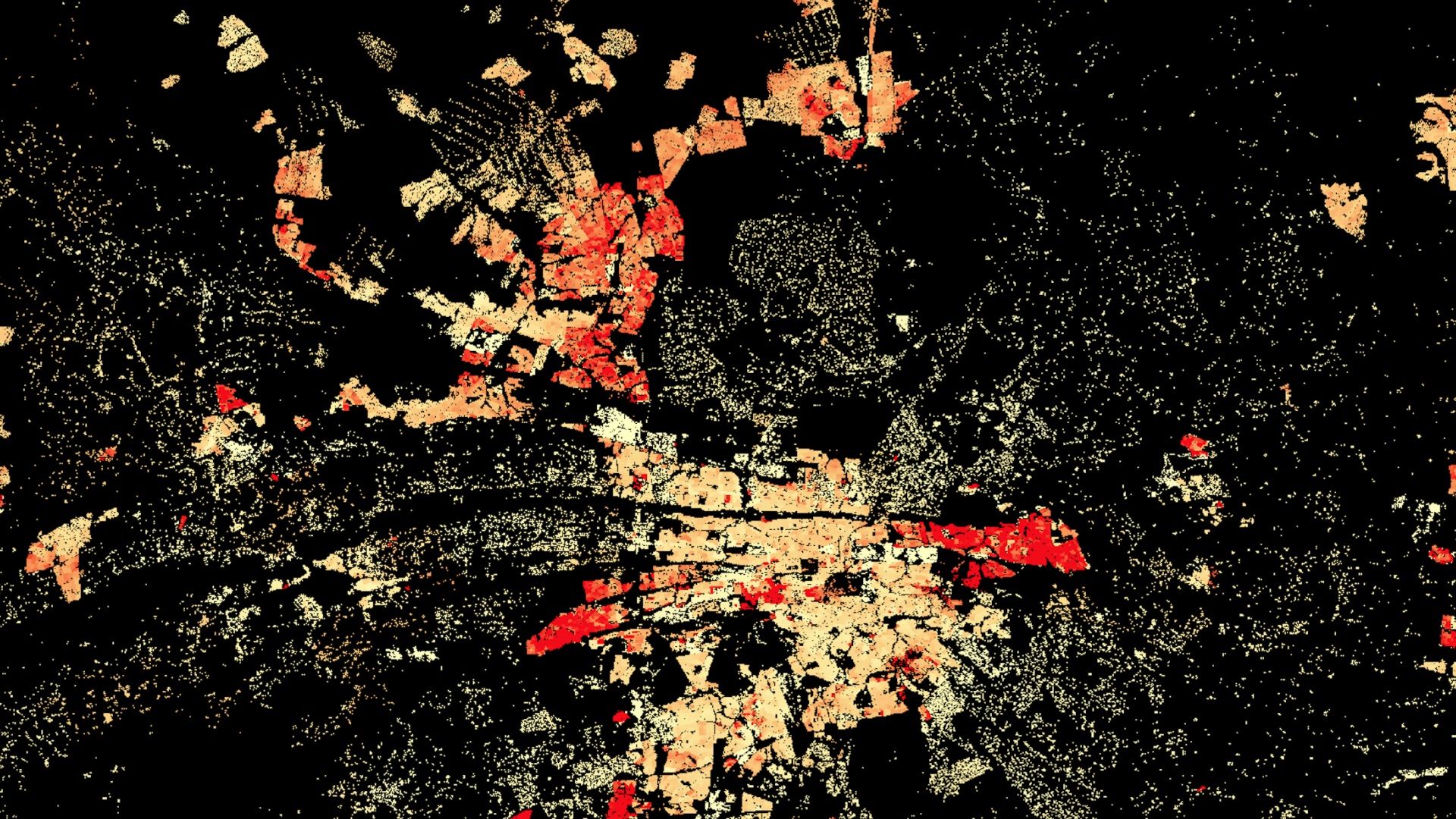
Understanding satellite data

Source image



Inference visualization







Goals for Day 2 and afterwards

- ❖ Introduce challenges and opportunities
- ❖ Discuss specific potential project areas
 - ❖ Poverty
 - ❖ Deforestation/environment
 - ❖ Agriculture
 - ❖ [[your suggestion here]]
- ❖ Line up data, problem owners, storage and computing resources, sponsors, and implementation plans for projects that
 - ❖ engage the AI/ML/vision communities
 - ❖ have potentially significant and lasting impact

Towards AI and Data Commons

- ❖ Day 3: 10.15-11.00, 14.00-15.00
- ❖ A collaboration environment to bring together AI practitioners with problem owners, data, computing resources, and training