Song–Land cover mapping in data-sparse regions
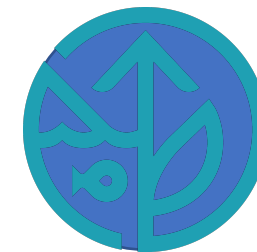
Lei Song, Clark University
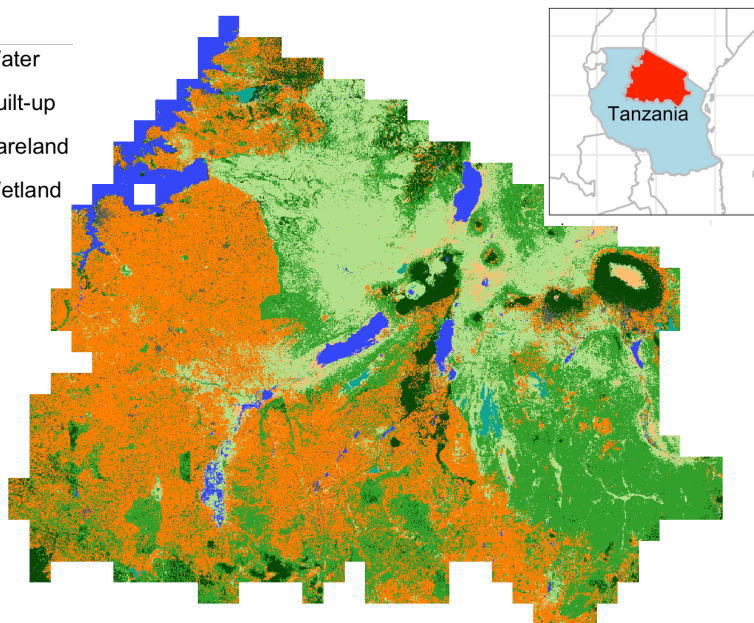
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Land cover

Cropland		Water	
Forest		Built-up	
Grassland		Bareland	
Shrubland		Wetland	

Tanzania

Landcover	Confidence
Cropland	81.27±15.10
Forest	83.95±17.48
Grassland	82.82±17.12
Shrubland	82.56±16.68
Water	94.89±12.18
Built-up	70.11±18.41
Bareland	79.93±18.62
Wetland	100.00± 0.00

Taking Northern Tanzania as a case study, we proposed a method to make timely and accurate land cover maps in data-sparse regions. It ensembles multiple existing land cover maps, human intelligence, and artificial intelligence. The proposed idea can fairly be applied to other scales or other data sources.

ENSEMBLE

- LC products
- Agree?
- Yes
- LC ensemble labels
- OSM features filter
- Samples

GUESS

- NICFI & S1 harmonic coefs
- RF guess model
- Guessed LC labels
- Human check
- Scored LC labels

CLASSIFICATION

- U-Net
- Quality-weighted loss
- Noisy labels
- Land cover classification
- Add Wetland