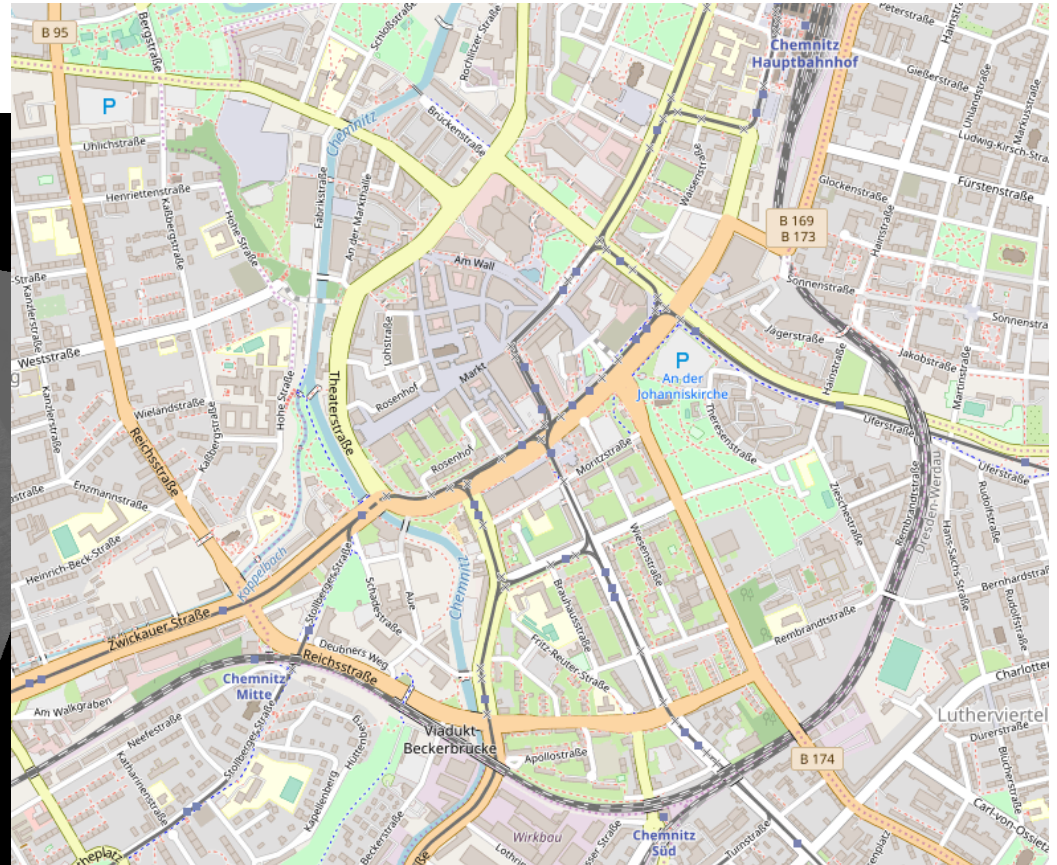


Modeling the Relationship between Landsat Imagery and OpenStreetMap Data



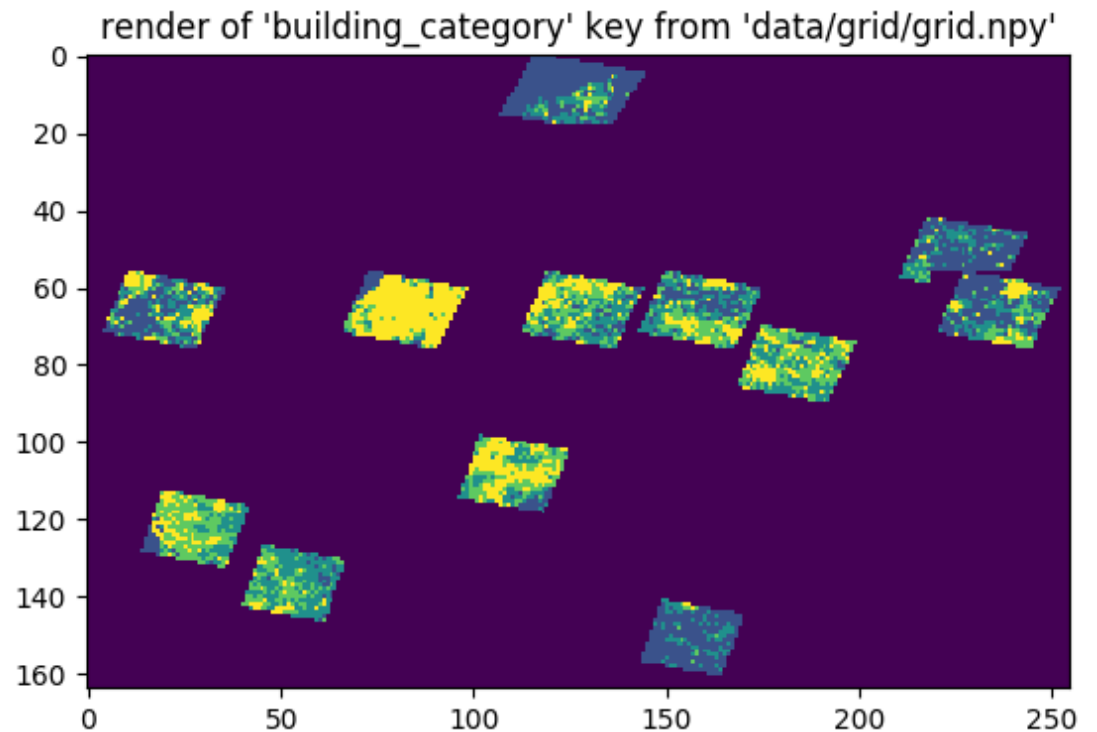
Question

Can be determined about a civilization from satellite imagery?



Proxies for Civilization

- Buildings
- Roads
- Lack of greenery



Training Area

- Europe has better OSM data than any other part of the world
- Koppen Climate Classification similar to parts of United States and China
- Large land area

Categories of Civilization

- Desolate (0-20 buildings/km)
- Rural (21-65 buildings/km)
- Suburban (66-135 buildings/km)
- Urban (>135 buildings/km)

Results

- Validation accuracy of >42% with four civilisation categories
- Similar accuracy when checked against the test set

Applications

- Testing areas of USA and China to determine expected civilization level versus mapping level
- Global heatmap of actual vs expected mapping level
- Other tools to focus OSM mapping efforts