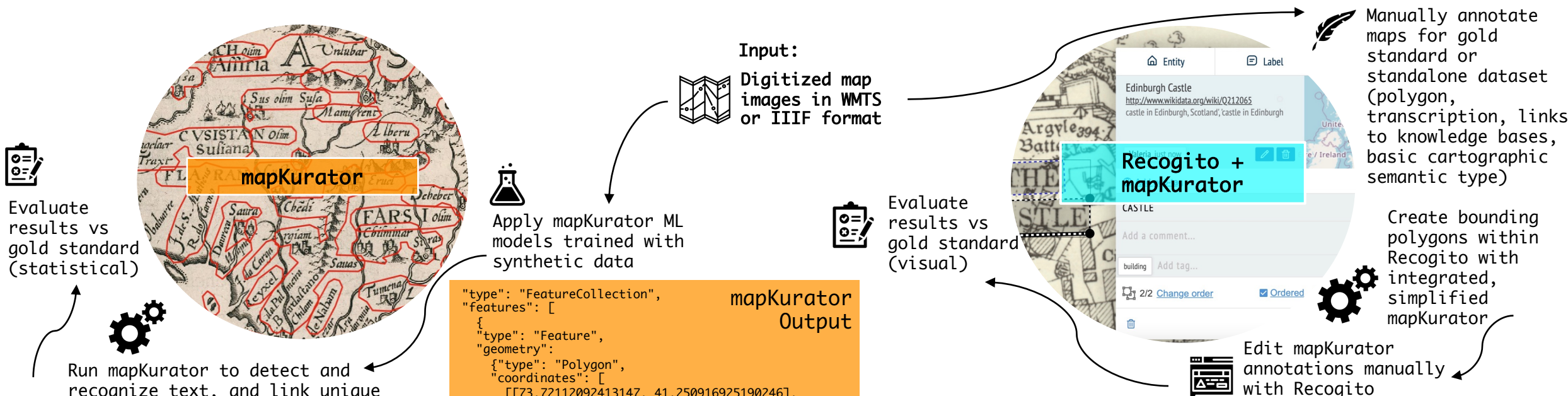


MACHINES READING MAPS

MRM is a collaborative project developing 1) tools for working with **text on maps** as machine-readable data (mapKurator & Recogito); 2) methods for **analyzing that data at scale**; and 3) GLAM workflows to improve the **discoverability** of large map collections. Our initial case studies explore the geography and linguistics of map labels for historical monuments on 19th-century OS maps of the UK and the description of minority and immigrant communities represented on large-scale 19th- and 20th-century fire insurance maps of Scotland and the US.



Evaluate results vs gold standard (statistical)

Run mapKurator to detect and recognize text, and link unique entities to external knowledge bases

Input:
Digitized map images in WMTS or IIIF format

Apply mapKurator ML models trained with synthetic data

```

mapKurator Output
{"type": "FeatureCollection",
 "features": [
  {
    "type": "Feature",
    "geometry": {
      "type": "Polygon",
      "coordinates": [
        [[73.72112092413147, 41.250916925190246],
         [-73.7208867799021, 41.25102442780674],
         ...
         [-73.72054923199592, 41.25031115176751],
         [-73.72076753052161, 41.25022693727543],
         [-73.72112092413147, 41.250916925190246]]
        ]
      },
      "properties": {
        "text": "Croton",
        "score": 0.8146643639000001,
        "wikidata_uri": "https://www.wikidata.org/wiki/Q54888680"
      }
    }
  ],
  ...
}

```

Evaluate results vs gold standard (visual)



Manually annotate maps for gold standard or standalone dataset (polygon, transcription, links to knowledge bases, basic cartographic semantic type)

Create bounding polygons within Recogito with integrated, simplified mapKurator

Edit mapKurator annotations manually with Recogito

```

Recogito Output
{"type": "FeatureCollection",
 "features": [
  {"type": "Feature",
   "geometry": {
     "type": "Point",
     "coordinates": [
       -122.237468, 37.654654
     ]
   },
   "properties": {
     "titles": "San Francisco Bay",
     "annotations": 1,
     "uris": ["http://www.wikidata.org/wiki/Q232264"],
     "titles": [ "San Francisco Bay" ],
     "source_gazetteers": ["https://california.wikidata.org"],
     "tags": [ "natural" ]
   }
 }
 ]
}

```