Radiant Earth Foundation

EARTH IMAGERY FOR IMPACT

2021 ML4EO Bootcamp: Lecture 5: SpatioTemporal Asset Catalog (STAC)

Jon Duckworth

Geospatial Software Engineer

Purpose of STAC

The SpatioTemporal Asset Catalog (STAC) specification provides a ***common language*** *to describe a range of* ***geospatial information****, so it can more easily be* ***indexed and discovered****.*

– https://stacspec.org/ *(emphasis added)*

Motivation

- Many different providers of remotely sensed data
- Many different APIs for search, discovery, and access
- Need a common language for search & discovery to reduce

planet.

sentinelhub

NASA

MAXAR

Capella Space

STAC Philosophy & Vision

- Small, flexible, extensible
- Driven by real use-cases
- Linked documents + data
- Machine- & human-readable
- Cloud-native (JSON)

STAC Objects

Item

- Represents distinct spatio-temporal asset as JSON Feature
- Contains metadata + links to related documents & assets

Collection

- Logical grouping of Items
- Summarizes spatial, temporal, and other metadata

Catalog

- Common entry point for navigating STAC metadata
- Brings many Collections and Items together in a single location

STAC API

- Dynamic version of STAC Catalog
- Supports more powerful querying of Items
- Compliant with OGC API - Features

Resources

Website:
https://stacspec.org/

Core Spec:
https://github.com/radiantearth/stac-spec

Extensions:
https://stac-extensions.github.io/

API Spec:
https://github.com/radiantearth/stac-api-spec

Gitter Chat:
https://gitter.im/SpatioTemporal-Asset-Catalog/