ML

May 12, 2022

Chapter 1

Module Documentation

1.1 Entities

1.1.0.1 ogit/ML/TrainedModel

Trained machine learning model.

- id: `http://www.purl.org/ogit/ML/TrainedModel`
- valid-from: Tue Feb 18 00:00:00 UTC 2020
- creator: Kaushik Gondaliya
- scope: NTO
- parent: ogit/Node

attributes

- mandatory:
    - ogit/name
- optional:
    - ogit/ML/meta
    - ogit/ML/requirements
    - ogit/ML/trainedFrom
    - ogit/ML/trainingSummary
    - ogit/attachmentID
    - ogit/status
    - ogit/version

incoming edges

- ogit/uses <= ogit/ML/PredictionModel

outgoing edges

- ogit/ML/trainedOn => ogit/ML/TrainingData

- ogit/contains => ogit/Attachment

1.1.0.2   ogit/ML/PredictionModel

trained Prediction model which can be used by client directly.

- id: `http://www.purl.org/ogit/ML/PredictionModel`

- valid-from: Tue Feb 18 00:00:00 UTC 2020

- creator: Kaushik Gondaliya

- scope: NTO

- parent: ogit/Node

attributes

- mandatory:

    - ogit/name

- optional:

    - ogit/ML/activeModel
    - ogit/ML/activeVersion
    - ogit/ML/attributesSchema
    - ogit/ML/endpoint
    - ogit/ML/maxVersion
    - ogit/description

outgoing edges

- ogit/generates => ogit/Timeseries

- ogit/has => ogit/ML/TrainingData

- ogit/uses => ogit/ML/TrainedModel

1.1.0.3   ogit/ML/Feedback

Feedback for a prediction model

- id: `http://www.purl.org/ogit/ML/Feedback`

- valid-from: Wed Jun 16 00:00:00 UTC 2021

- creator: Philipp Pelchmann

- scope: NTO

- parent: ogit/Node

attributes

- optional:
    - ogit/ML/classifierName
    - ogit/ML/correctCategory
    - ogit/ML/inputString

1.1.0.4 ogit/ML/TrainingData

Training data for machine learning model.

- id: `http://www.purl.org/ogit/ML/TrainingData`
- valid-from: Tue Feb 18 00:00:00 UTC 2020
- creator: Kaushik Gondaliya
- scope: NTO
- parent: ogit/Node

attributes

- optional:
    - ogit/ML/size
    - ogit/ML/sourceDataFromTime
    - ogit/ML/sourceDataToTime
    - ogit/ML/trainData
    - ogit/attachmentID
    - ogit/name
    - ogit/type

incoming edges

- ogit/ML/trainedOn <= ogit/ML/TrainedModel
- ogit/has <= ogit/ML/PredictionModel

outgoing edges

- ogit/contains => ogit/Attachment

1.1.0.5 ogit/Attachment

This entity defines a file attachment that an IT service, issue, task or a ticket might have. The attachment itself is not saved in GraphIT, instead it contains an external url link for it.

- id: `http://www.purl.org/ogit/Attachment`
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem
- scope: SGO
- parent: ogit/Node

attributes

- optional:

    - ogit/accessControl
    - ogit/content
    - ogit/createdAt
    - ogit/creator
    - ogit/id
    - ogit/lastUpdatedAt
    - ogit/lastUpdatedBy
    - ogit/name
    - ogit/size
    - ogit/sourceTable
    - ogit/type
    - ogit/url

incoming edges

- ogit/contains <= ogit/ML/TrainedModel

- ogit/contains <= ogit/ML/TrainingData

1.1.0.6 ogit/Timeseries

A time series is a sequence of data points, measured typically at successive points in time spaced at uniform time intervals.

- id: `http://www.purl.org/ogit/Timeseries`

- valid-from: Thu May 21 00:00:00 UTC 2015

- creator: Peter Larem

- scope: SGO

- parent: ogit/Node

attributes

- optional:

    - ogit/description
    - ogit/instance
    - ogit/isMutable
    - ogit/isPermanent
    - ogit/name
    - ogit/unit

incoming edges

- ogit/generates <= ogit/ML/PredictionModel

1.2 Verbs

1.2.0.1 ogit/contains

This relationship indicates that something is part of something else. see also "includes"

- id: http://www.purl.org/ogit/contains
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

Allowed Connection

- ogit/ML/TrainedModel => ogit/Attachment
- ogit/ML/TrainingData => ogit/Attachment

1.2.0.2 ogit/generates

Verb indicating if an entity generates another entity.

- id: http://www.purl.org/ogit/generates
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

Allowed Connection

- ogit/ML/PredictionModel => ogit/Timeseries

1.2.0.3 ogit/ML/trainedOn

it defines model trained on training data.

- id: http://www.purl.org/ogit/ML/trainedOn
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

Allowed Connection

- ogit/ML/TrainedModel => ogit/ML/TrainingData

1.2.0.4 ogit/uses

This relationship indicates that some entity is used by some other.

- id: http://www.purl.org/ogit/uses

- valid-from: Thu May 21 00:00:00 UTC 2015

- creator: Peter Larem

Allowed Connection

- ogit/ML/PredictionModel => ogit/ML/TrainedModel

1.2.0.5 ogit/has

Indicates if an entity has another entity.

- id: http://www.purl.org/ogit/has

- valid-from: Thu Mar 28 00:00:00 UTC 2019

- creator: Kaushik Gondaliya

Allowed Connection

- ogit/ML/PredictionModel => ogit/ML/TrainingData

1.3 Attributes

1.3.0.1 ogit/ML/maxVersion

maximal version of ML model.

- id: http://www.purl.org/ogit/ML/maxVersion
- valid-from: Wed Aug 11 00:00:00 UTC 2021
- creator: Philipp Pelchmann

used

- optional:
    - ogit/ML/PredictionModel

1.3.0.2 ogit/ML/endpoint

endpoint of prediction model.

- id: http://www.purl.org/ogit/ML/endpoint
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/PredictionModel

1.3.0.3 ogit/url

Contains an URL (unified resource locator)

- id: http://www.purl.org/ogit/url
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment

1.3.0.4 ogit/isPermanent

If value equals "true" vertex can not be updated or deleted. E.g. after a service is provisioned.

- id: http://www.purl.org/ogit/isPermanent
- valid-from: Fri Mar 05 00:00:00 UTC 2021
- creator: Vitaly Teremasov

used

- optional:
    - ogit/Timeseries

1.3.0.5 ogit/unit

Unit of measurement of some value.

- id: http://www.purl.org/ogit/unit
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Timeseries

1.3.0.6 ogit/ML/size

The size of training data. Number of rows or entries.

- id: http://www.purl.org/ogit/ML/size
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/TrainingData

1.3.0.7 ogit/status

A status for an entity. At this level of specification no list of values is specified. However, applications using this attribute are expected to allow only a fixed list of values that seems useful in the application's semantic context.

- id: http://www.purl.org/ogit/status
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/ML/TrainedModel

1.3.0.8 ogit/createdAt

Defines a point in time when a ticket/incident/event etc was created or recorded.

- id: http://www.purl.org/ogit/createdAt
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment

1.3.0.9 ogit/accessControl

The access control level of this Node. Value could mean different things to different applications / policies. Initial intent is that policies would treat "public-read" (inspired by Amazon AWS S3 ACLs) to mean anyone would have read-only access to this node.

- id: http://www.purl.org/ogit/accessControl
- valid-from: Thu Mar 26 00:00:00 UTC 2015
- creator: Chris Walker

used

- optional:
    - ogit/Attachment

1.3.0.10   ogit/ML/sourceDataFromTime

start timestamp from which training data has been collected by source/user.

- id: http://www.purl.org/ogit/ML/sourceDataFromTime

- valid-from: Wed May 11 00:00:00 UTC 2022

- creator: Kaushik Gondaliya

used

- optional:

    – ogit/ML/TrainingData

1.3.0.11   ogit/ML/classifierName

name of a classifier

- id: http://www.purl.org/ogit/ML/classifierName

- valid-from: Wed Jun 16 00:00:00 UTC 2021

- creator: Philipp Pelchmann

used

- optional:

    – ogit/ML/Feedback

1.3.0.12   ogit/ML/activeVersion

currently active version of ML model.

- id: http://www.purl.org/ogit/ML/activeVersion

- valid-from: Wed Feb 19 00:00:00 UTC 2020

- creator: Kaushik Gondaliya

used

- optional:

    – ogit/ML/PredictionModel

1.3.0.13 ogit/version

Any string representation of version information. no restrictions are imposed on that base attribute

- id: <http://www.purl.org/ogit/version>
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/ML/TrainedModel

1.3.0.14 ogit/content

A string holding any type of content: plain string, XML fragments, RDF documents, ...

- id: <http://www.purl.org/ogit/content>
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment

1.3.0.15 ogit/ML/inputString

input as string

- id: <http://www.purl.org/ogit/ML/inputString>
- valid-from: Wed Jun 16 00:00:00 UTC 2021
- creator: Philipp Pelchmann

used

- optional:
    - ogit/ML/Feedback

1.3.0.16 ogit/attachmentID

Node Id for attachment node.

- id: http://www.purl.org/ogit/attachmentID
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
  - ogit/ML/TrainedModel
  - ogit/ML/TrainingData

1.3.0.17 ogit/name

Contains a name.

- id: http://www.purl.org/ogit/name
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- mandatory:
  - ogit/ML/PredictionModel
  - ogit/ML/TrainedModel
- optional:
  - ogit/Attachment
  - ogit/ML/TrainingData
  - ogit/Timeseries

1.3.0.18 ogit/description

Contains a description.

- id: http://www.purl.org/ogit/description
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
  - ogit/ML/PredictionModel
  - ogit/Timeseries

1.3.0.19 ogit/ML/attributesSchema

Information about attributes of training data, for example, How many columns, which type (String/Interger)

- id: http://www.purl.org/ogit/ML/attributesSchema
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/PredictionModel

1.3.0.20 ogit/ML/trainedFrom

Node Id of Traindata

- id: http://www.purl.org/ogit/ML/trainedFrom
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/TrainedModel

1.3.0.21 ogit/lastUpdatedBy

Defines the last person or process who updated an entity.

- id: http://www.purl.org/ogit/lastUpdatedBy
- valid-from: Mon Jul 20 00:00:00 UTC 2015
- creator: Aymen Ayoub

used

- optional:
    - ogit/Attachment

1.3.0.22 ogit/type

Type of an an entity.

- id: http://www.purl.org/ogit/type
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment
    - ogit/ML/TrainingData

1.3.0.23 ogit/isMutable

True if the value can be changed. E.g. after a service is provisioned.

- id: http://www.purl.org/ogit/isMutable
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Timeseries

1.3.0.24 ogit/sourceTable

Contains the source table, that stores where the data are coming from.

- id: http://www.purl.org/ogit/sourceTable
- valid-from: Thu Aug 20 00:00:00 UTC 2015
- creator: Aymen Ayoub

used

- optional:
    - ogit/Attachment

1.3.0.25 ogit/ML/requirements

required information such as name and Version of the machine learning Frameworks, z.B. keras+tensorflow 1.20

- id: http://www.purl.org/ogit/ML/requirements
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    – ogit/ML/TrainedModel

1.3.0.26 ogit/creator

Creator of an entity.

- id: http://www.purl.org/ogit/creator
- valid-from: Thu Aug 20 00:00:00 UTC 2015
- creator: Aymen Ayoub

used

- optional:
    – ogit/Attachment

1.3.0.27 ogit/ML/meta

Meta infromation about machine learning model

- id: http://www.purl.org/ogit/ML/meta
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    – ogit/ML/TrainedModel

1.3.0.28 ogit/lastUpdatedAt

Defines latest date and time when a ticket or it's comment was updated. The format of this value could be according to ISO 8601.

- id: http://www.purl.org/ogit/lastUpdatedAt
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment

1.3.0.29 ogit/id

General id.

- id: http://www.purl.org/ogit/id
- valid-from: Thu May 21 00:00:00 UTC 2015
- creator: Peter Larem

used

- optional:
    - ogit/Attachment

1.3.0.30 ogit/ML/activeModel

ogit/_id of the currently active model of ML model.

- id: http://www.purl.org/ogit/ML/activeModel
- valid-from: Tue May 19 00:00:00 UTC 2020
- creator: Philipp Pelchmann

used

- optional:
    - ogit/ML/PredictionModel

1.3.0.31 ogit/ML/correctCategory

The corrected category for a related input string

- id: http://www.purl.org/ogit/ML/correctCategory
- valid-from: Wed Jun 16 00:00:00 UTC 2021
- creator: Philipp Pelchmann

used

- optional:
    - ogit/ML/Feedback

1.3.0.32 ogit/size

The size, e.g. of a file.

- id: http://www.purl.org/ogit/size
- valid-from: Thu Mar 26 00:00:00 UTC 2015
- creator: arago Technologies

used

- optional:
    - ogit/Attachment

1.3.0.33 ogit/ML/trainData

if training data < 10Mb, it can be stored directly in this attribute (for Example as JSON). Attachment can be used for larger amount of training data. However, one of the trainData or attachmentID should be used, not both

- id: http://www.purl.org/ogit/ML/trainData
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/TrainingData

1.3.0.34 ogit/ML/sourceDataToTime

end timestamp upto which training data has been collected by source/user.

- id: http://www.purl.org/ogit/ML/sourceDataToTime
- valid-from: Wed May 11 00:00:00 UTC 2022
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/TrainingData

1.3.0.35 ogit/ML/trainingSummary

summary about training the machine learning model

- id: http://www.purl.org/ogit/ML/trainingSummary
- valid-from: Wed Feb 19 00:00:00 UTC 2020
- creator: Kaushik Gondaliya

used

- optional:
    - ogit/ML/TrainedModel

1.3.0.36 ogit/instance

Defines the name of an instance.

- id: http://www.purl.org/ogit/instance
- valid-from: Wed Aug 03 00:00:00 UTC 2016
- creator: Philipp Pelchmann

used

- optional:
    - ogit/Timeseries