

PLONE 5 & ML

THE MOST POWERFUL PYTHON OPEN
SOURCE CMS

Created by [Ramon Navarro Bosch](#) / [@bloodbare](#)

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- Plone Framework Team
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- Catalan

THE TALK

- PLONE 5
- Machine Learning

PLONE 5

- Quality
- Tests
- Protect investment in current sites
- Usability for real people
- Stability
- Scale from S to XL

WHO DOES NOT KNOW PLONE?

From the user point of view



CONTENT

Content is the king (Dexterity)

With full multilingual

GRANULAR SECURITY

Zope/ZODB
Workflow



THEMING

RequireJS/LESS
XSLT/DIAZO



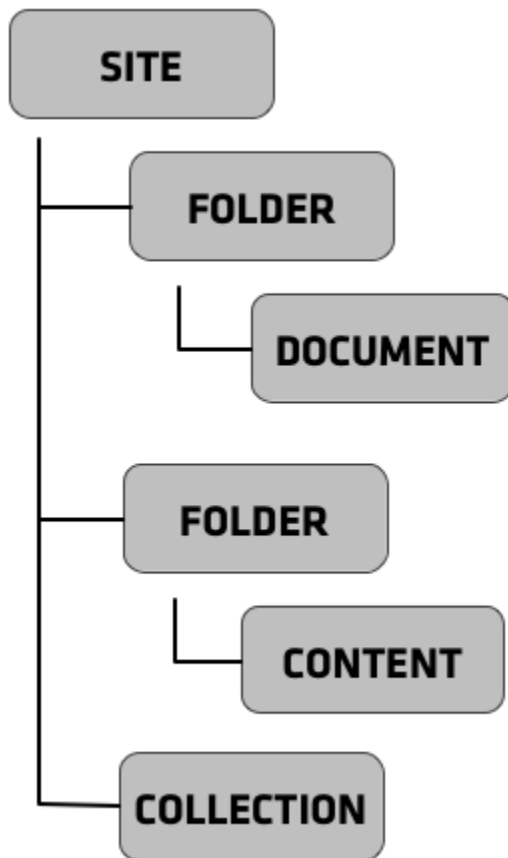
INLINE EDITION / TTW

TRY!

WHO DOES NOT KNOW PLONE

From the tech point of view

HIERARCHY



DEXTERITY

```
from plone.app.textfield import RichText
from plone.autoform import directives
from plone.namedfile import field as namedfile
from plone.supermodel.directives import fieldset
from plone.supermodel import model
from z3c.form.browser.radio import RadioFieldWidget
from zope import schema
from zope.schema.vocabulary import SimpleVocabulary
from zope.schema.vocabulary import SimpleTerm

from ploneconf.site import MessageFactory as _

LevelVocabulary = SimpleVocabulary(
    [SimpleTerm(value=u'platinum', title=_(u'Platinum Sponsor')),
     SimpleTerm(value=u'gold', title=_(u'Gold Sponsor')),
     SimpleTerm(value=u'silver', title=_(u'Silver Sponsor'))]
```

TRAVERSAL

```
http://yoursite.cat/folder-i-created/my-document/my_view
```

VIEWS

```
from Products.CMFCore.utils import getToolByName
from Products.Five.browser import BrowserView
from Products.CMFPlone.resources import add_resource_on_request

class TalkListView(BrowserView):
    """ A list of talks
    """

    def __call__(self):
        add_resource_on_request(self.request, 'jquery.datatables')
        return super(TalkListView, self).__call__()

    def talks(self):
        results = []
        portal_catalog = getToolByName(self.context, 'portal_catalog')
        current_path = "/" + join(self.context.getPhysicalPath())
```

VIEWS II

```
<browser:page
  name="talklistview"
  for="*"
  layer="..interfaces.IPloneconfSiteLayer"
  class=".views.TalkListView"
  template="templates/talklistview.pt"
  permission="zope2.View"
/>
```

VIEWS III

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en"
      metal:use-macro="context/main_template/macros/master"
      i18n:domain="ploneconf.site">
<body>

<metal:head fill-slot="javascript_head_slot">
  <script type="text/javascript">
    $(document).ready(function(){
      var oTable = $('#talks').dataTable({
      });
    })
  </script>
</metal:head>

<metal:content-core fill-slot="content-core">

  <table class="listing" id="talks">
```

PYTHONIC

```
site.folder.document.attribute
```

ZOPE COMPONENT ARCHITECTURE

STORAGE OF COMPONENTS

- global registry
- local registry

ADAPTER

```
class IPerson(Interface):  
    def whichTShirtIMWearing(self):  
        pass  
  
class CatalanGuy(object):  
    implements(IPerson)  
  
    def whichTShirtIMWearing(self):  
        return "estelada"  
  
class BaskGuy(object):  
    implements(IPerson)
```

SUBSCRIBER

```
<subscriber  
  for="object.IKindOfObject  
    zope.lifecycleevent.interfaces.IObjectModifiedEvent"  
  handler="function"  
>
```

UTILITY

```
<utility  
  for=".interfaces.IGoodAlcohol"  
  handler=".object.GoodAlcohol"  
>
```

JS/CSS

- Mockup/Patterns

```
<input class="pat-pickadate" type="text"
name="form.widgets.IDublinCore.effective"
value=""
data-pat-pickadate="{
  'date': {
    'format': 'mmm d, yyyy',
    'max': [2035, 1, 1],
    'min': [1915, 1, 1],
    'firstDay': 0,
    'selectYears': 200,
    'placeholder': 'Posa una data',
    'today': 'Avui'},
  'time': {
    'placeholder': 'Tria l\'hora',
    'today': 'Avui',
    'format': 'h:i a'}}" >
```

- RequireJS/LESS

DIAZO

```
<?xml version="1.0" encoding="UTF-8"?>
<rules
  xmlns="http://namespaces.plone.org/diazo"
  xmlns:css="http://namespaces.plone.org/diazo/css"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

  <theme href="/++theme++abb.basictheme/index.html" css:if-not-content=
  <theme href="/++theme++abb.basictheme/index-anon.html" css:if-content
  <notheme css:if-not-content="#visual-portal-wrapper" />

  <rules if-content="//*[@id='portal-top']">
    <!-- Attributes -->
    <copy attributes="*" theme="/html" content="/html"/>
    <!-- Base tag -->
    <before theme="/html/head/title" content="/html/head/base"/>
    <!-- Title -->
    <replace theme="/html/head/title" content="/html/head/title" />
```

REST API

plone.rest

```
<plone:service  
  method="PUT"  
  for="plone.dexterity.interfaces.IDexterityContent"  
  factory=".demo.Put"  
>
```

```
class Put(Service):  
    def render(self):  
        return ISerializeToJSON(self.content)
```

TESTING

[JENKINS.PLONE.ORG](https://jenkins.plone.org)



... and the plone testing team

PLONE 5.0 BETA 3!

IS HERE!

```
git clone git@github.com:plone/jump.into.git  
  
python2.7 bootstrap.py  
  
# You need python-dev libpng-dev libjpeg-dev build-essential  
# libxml2-dev libxslt-dev (gcc)  
  
./bin/buildout -v  
  
# Coffee  
  
./bin/instance fg
```

TRAINING AND DOCS

- training.plone.org
- docs.plone.org

FUTURE (MY OPINION)?

- REST API
- asyncio
- Pyramid/SustanceD
- JS frontend

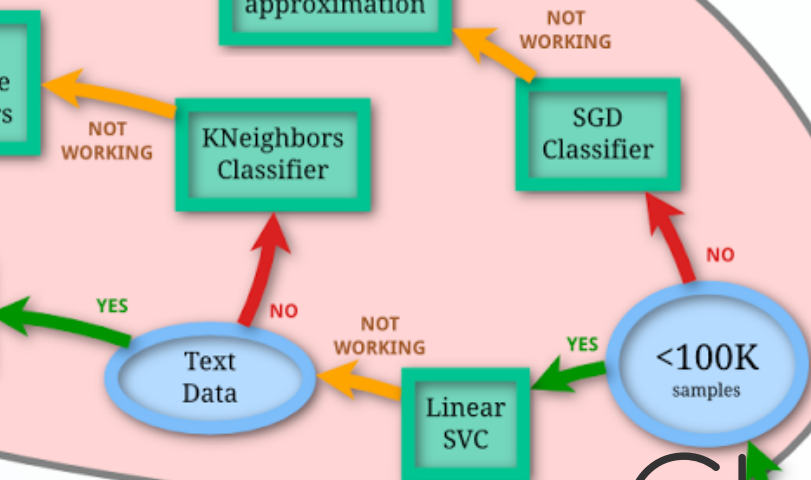
MACHINE LEARNING?

Content focused with sklearn

GOALS

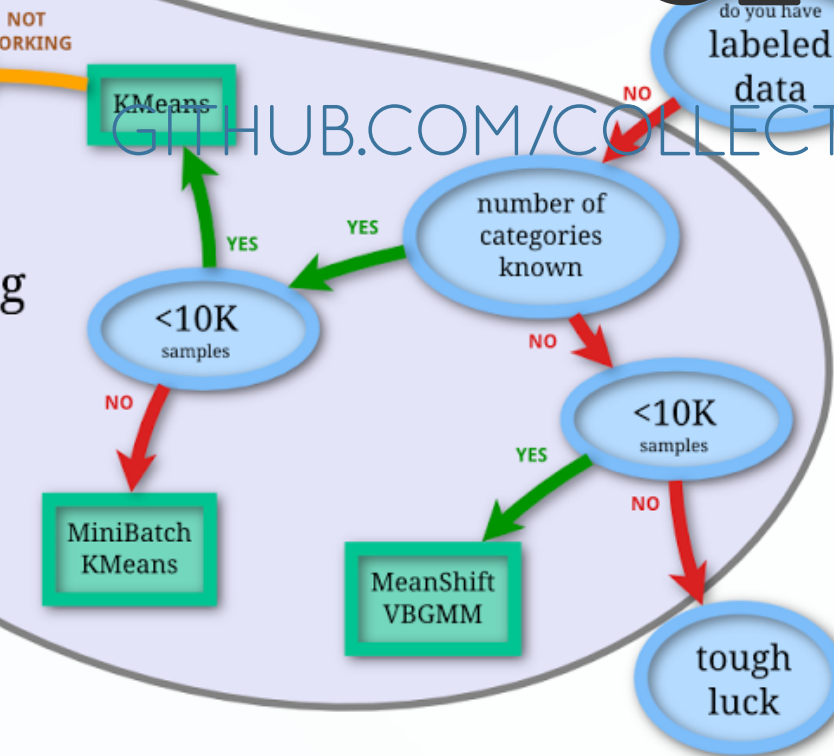
- Related content
- Classification of current content with existing data set
- Recommendation of subject tags
- Semantic search on the live search

Classification

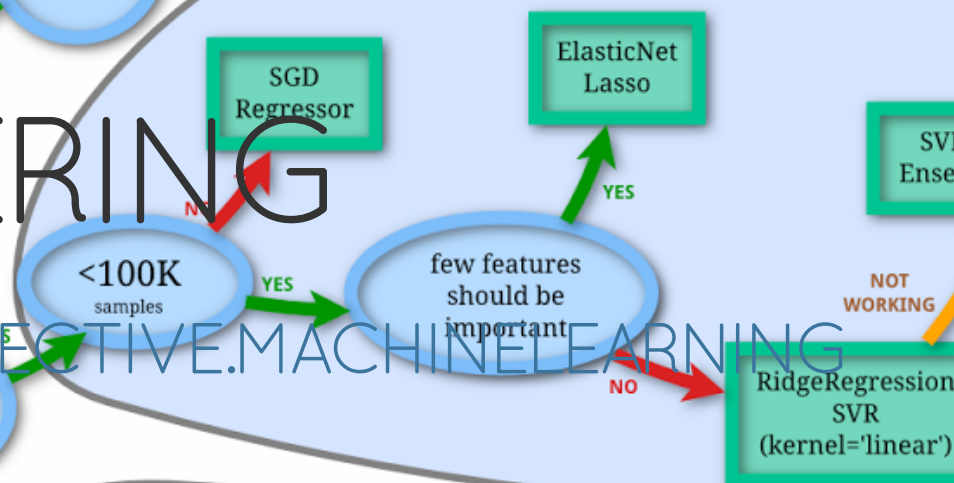


scikit-learn
algorithm cl

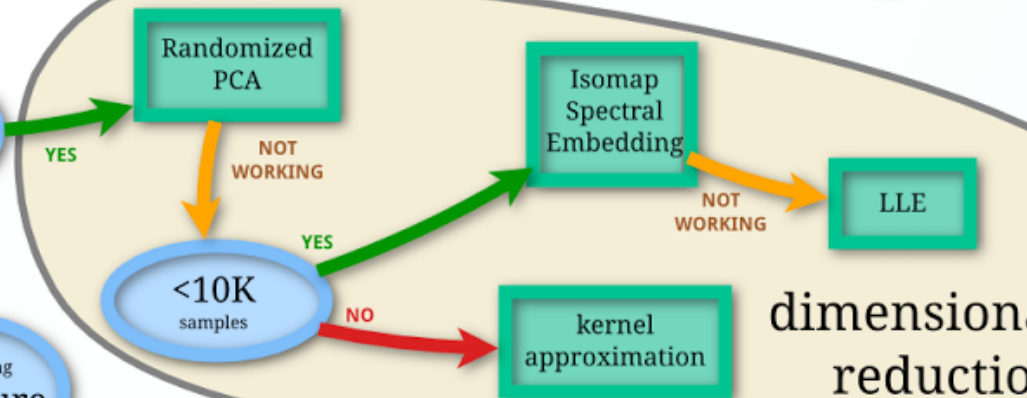
CLUSTERING



regression



just looking



dimension
reduction

ADAPTER ILEARNINGSTRING

```
from zope.component import getAdapter
from collective.machinelearning.interfaces import ILearningString

getAdapter(obj, ILearningString)
```


NORMALIZE AND VECTORIZE

- `nltk.stem`
- `FeatureHasher`

And we store the corpus as a pickle

CLUSTERIZE

- Define the number of clusters on FE
- KMeans!

And we store the model as a pickle

- We store on the objects to which cluster it belongs
- We can predict new objects to which cluster it belongs
- Security is implicit by Plone

FUTURE

- Classification (now trying Naive Bayes) on clusters (collective.gensim)
- Recommendation
- Semantic Search
- External and incremental computation

COMMUNITY



THE END

THANKS

@BLOODBARE

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