

CE 2017

Agenda

1. Introduction
2. A bit on developers
3. Introduction ArcGIS bindings for R
4. Introduction to ArcGIS Python API

Introduction

During the second day of EC2017 I attended the developers session and the last technical talk, an introduction to ArcGIS Python API.

The developers session was a light introduction to the geodevelopers.org community resources, as well as some of the key components of ArcGIS platform.

WebGL, Three.js and ArcGIS JavaScript API were briefly introduced to the attendees.

ArcGIS R-bindings, which gives access to ArcGIS users to the vast array of data analysis and statistical anylisis of R environment, was succinctly introduced to audience.

Eventually, the last technical talk gave a general overview of the ArcGIS Python API modules and functionalities.

A bit on developers

- ESRI is funding geodevelopers.org, a community for geodevelopers working mainly on ArcGIS technologies, APIs and apps.
- Community members can interact and access the resources via:

Meetup: [meetup.com/Geo-Developers](https://www.meetup.com/Geo-Developers)

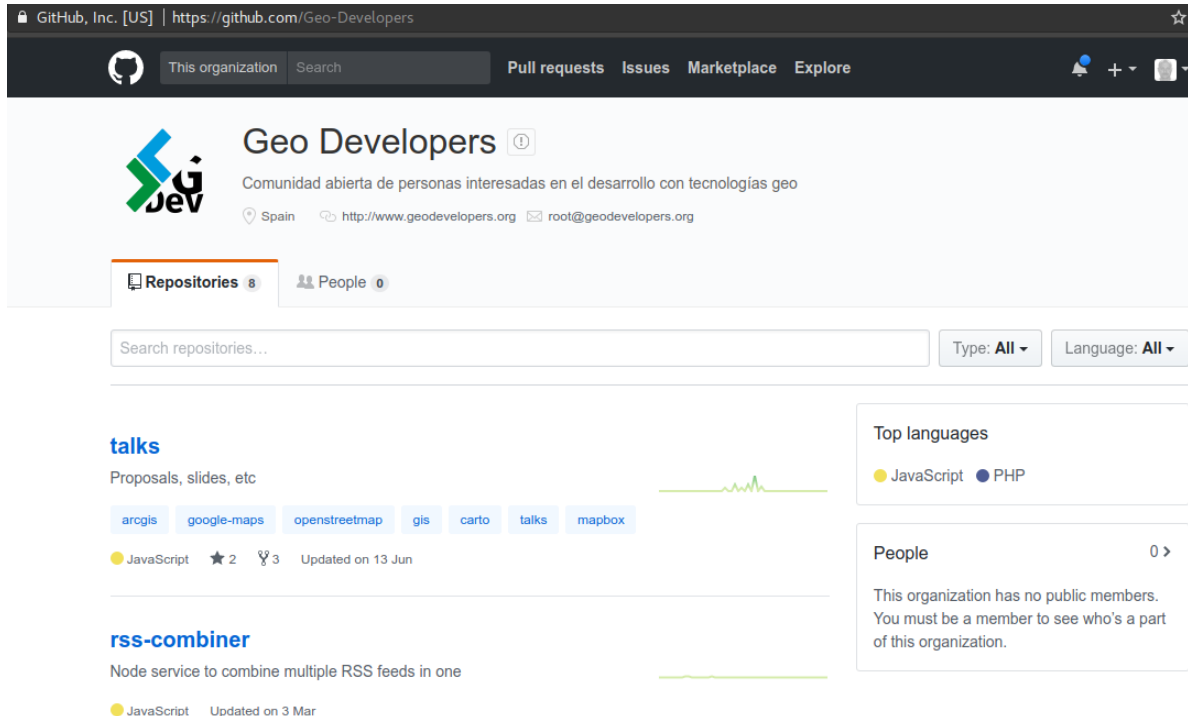
Twitter: twitter.com/Geo_Developers

Github: github.com/Geo-Developers

YouTube: [youtube.com/GeoDevelopers](https://www.youtube.com/GeoDevelopers)

Slack: geodevelopers.org/community


Geo-Developers on GitHub



The screenshot shows the GitHub organization page for "Geo Developers". The header includes the GitHub logo, the organization name, and a description: "Comunidad abierta de personas interesadas en el desarrollo con tecnologías geo". It also lists the location as "Spain" and provides a website and email address. Below the header, there are tabs for "Repositories" (8) and "People" (0). A search bar for repositories is present, along with filters for "Type: All" and "Language: All". The main content area displays two repositories: "talks" and "rss-combiner". The "talks" repository is described as "Proposals, slides, etc" and includes tags for "arcgis", "google-maps", "openstreetmap", "gis", "carto", "talks", and "mapbox". It shows 2 stars and 3 forks, updated on 13 Jun. The "rss-combiner" repository is described as "Node service to combine multiple RSS feeds in one" and is updated on 3 Mar. On the right side, there are two sidebars: "Top languages" showing JavaScript and PHP, and "People" showing 0 members with a message that the organization has no public members.

GitHub, Inc. [US] | <https://github.com/Geo-Developers>

This organization Search Pull requests Issues Marketplace Explore

 **Geo Developers** ⓘ

Comunidad abierta de personas interesadas en el desarrollo con tecnologías geo

Spain <http://www.geodevelopers.org> root@geodevelopers.org

Repositories 8 People 0

Search repositories... Type: All Language: All

talks

Proposals, slides, etc

[arcgis](#) [google-maps](#) [openstreetmap](#) [gis](#) [carto](#) [talks](#) [mapbox](#)

JavaScript ★ 2 🍴 3 Updated on 13 Jun

rss-combiner

Node service to combine multiple RSS feeds in one

JavaScript Updated on 3 Mar

Top languages

JavaScript PHP

People 0 >

This organization has no public members.
You must be a member to see who's a part of this organization.

A bit of R bindings for ArcGIS

```
tool_exec <- function(in_params, out_params)
{
  ##### Load Library for Analysis #####
  if (!requireNamespace("SemiPar", quietly = TRUE))
    install.packages("SemiPar")
  require(SemiPar)

  ##### Get Input Parameters #####
  input_features <- in_params[[1]]
  input_predictions <- in_params[[2]]
  dep_variable <- in_params[[3]]
  # ...
  output_features <- out_params[[1]]
  output_graph_pdf <- out_params[[2]]

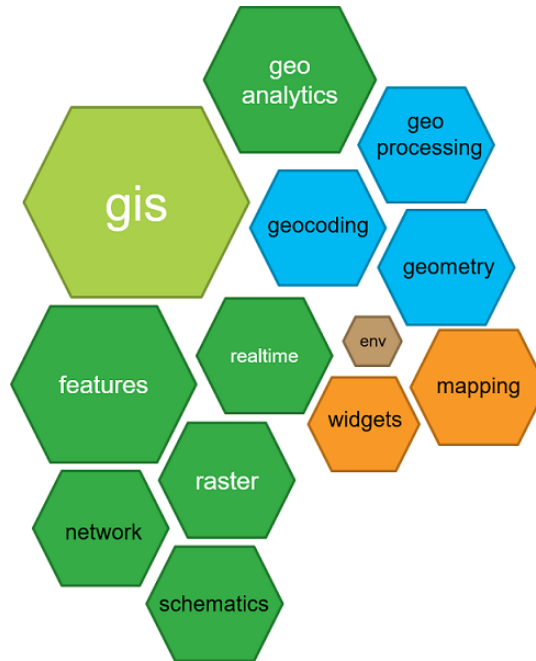
  ##### Import Dataset to Dataframe #####
  fc <- arc.open(input_features)
  df <- arc.select(fc, c(dep_variable, nonlin_variables, lin_variables))
  df['x'] <- arc.shape(df)$x
  df['y'] <- arc.shape(df)$y

  ###
  # script functionality
  ###

  arc.write(output_features, pred_df)
  return(out_params)
}
```

Introduction to ArcGIS Python API

- The ArcGIS API for Python provides a **pythonic representation of a GIS**.
- The API has Python *modules*, *classes*, *functions*, and *types* for managing and working with elements of the ArcGIS platform information model.



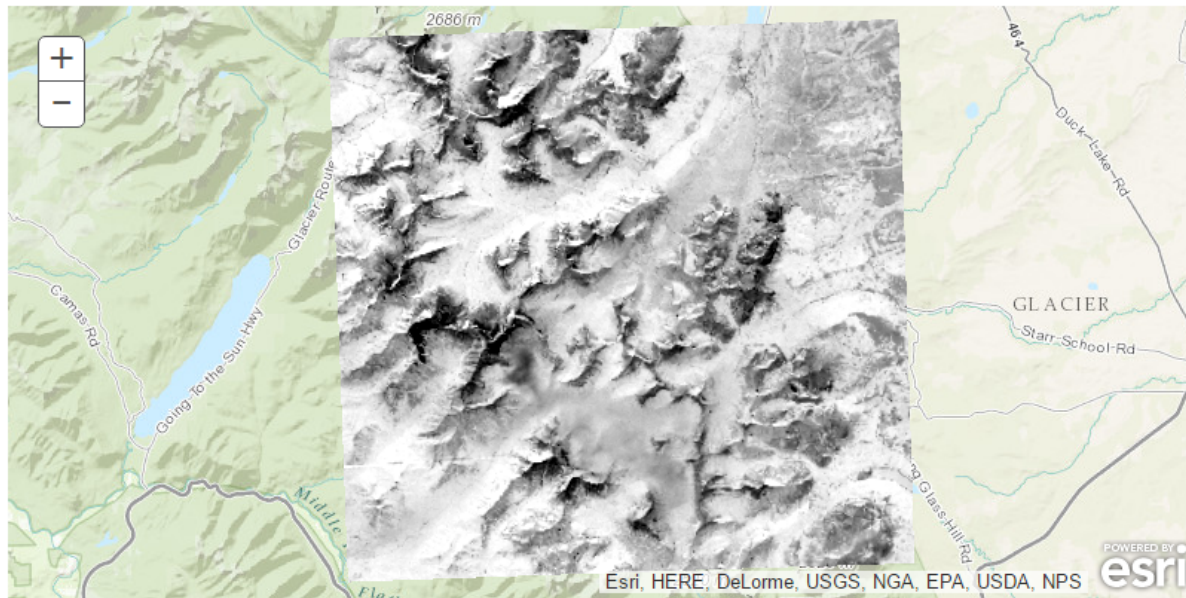
ArcGIS modules

ArcGIS API contains 13 modules which allow advanced users to perform and automatize administration, analysis and visualization tasks.

- **arcgis.gis** module
- **arcgis.env** module
- **arcgis.features** module
- **arcgis.raster** module
- **arcgis.network** module
- **arcgis.schematics** module
- **arcgis.geoanalytics** module
- **arcgis.geocoding** module
- **arcgis.geometry** module
- **arcgis.geoprocessing** module
- **arcgis.realtime** module
- **arcgis.mapping** module
- **arcgis.widgets** module

Python raster analysis

```
import arcgis
from arcgis.gis import GIS
portal = GIS("portal_url", "username", "password")
montana_ndvi = portal.content.search("GeneratedRasterProduct_JRA9W9")[0]
ndvi_map = portal.map(location, 12)
ndvi_map
```



Python Mapping

```
from arcgis.gis import *  
gis = GIS()  
map1 = gis.map('USA',3)  
map1
```

