Explore the Power of the ArcGIS API for Python

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File   View   Help

Attendee List   (2 | Max 26)

			NAMES - ALPHABETICALLY	▼
🎤			**Jason V (Organizer, Presenter)**	
🎤		🎥	John S (Me)	

Audio

○ Telephone

◉ Mic & Speakers   (test)

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Webcam

🎥 Stop Sharing My Webcam   Webcams ▼

Chat

Jason V (to All - Entire Audience):
Welcome to the meeting!

[Type message here]

All - Entire Audience ▼   Send

Meet Now
Meeting ID: 109-873-400

GoToMeeting

Explore the Power of the ArcGIS API for Python

Ben Ramseth
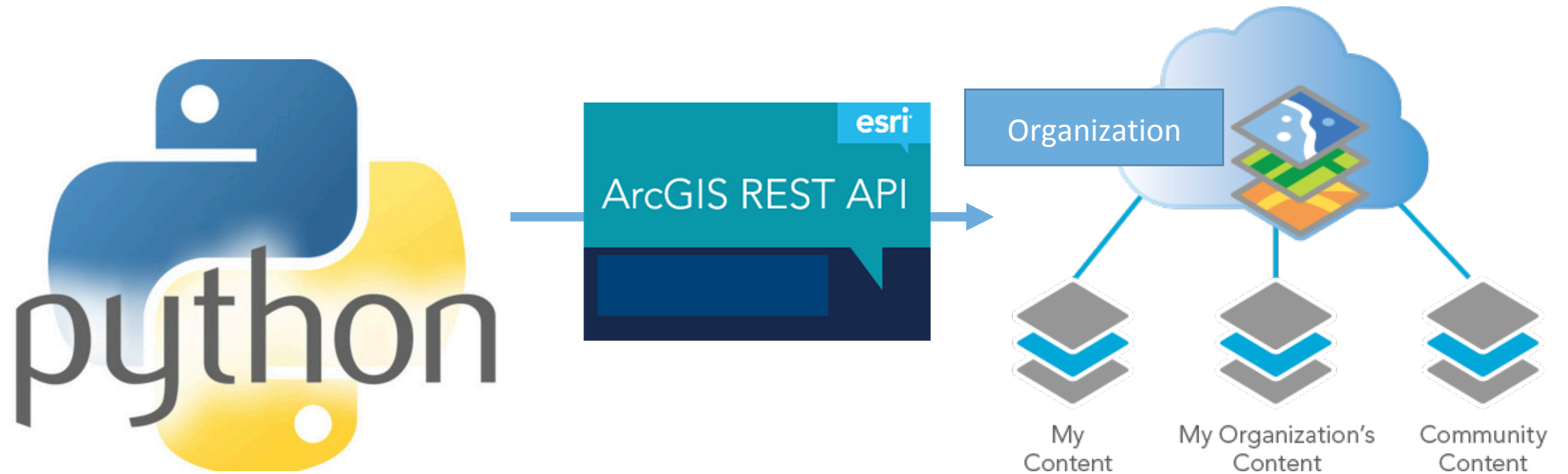
bramseth@esri.com

Atma Mani
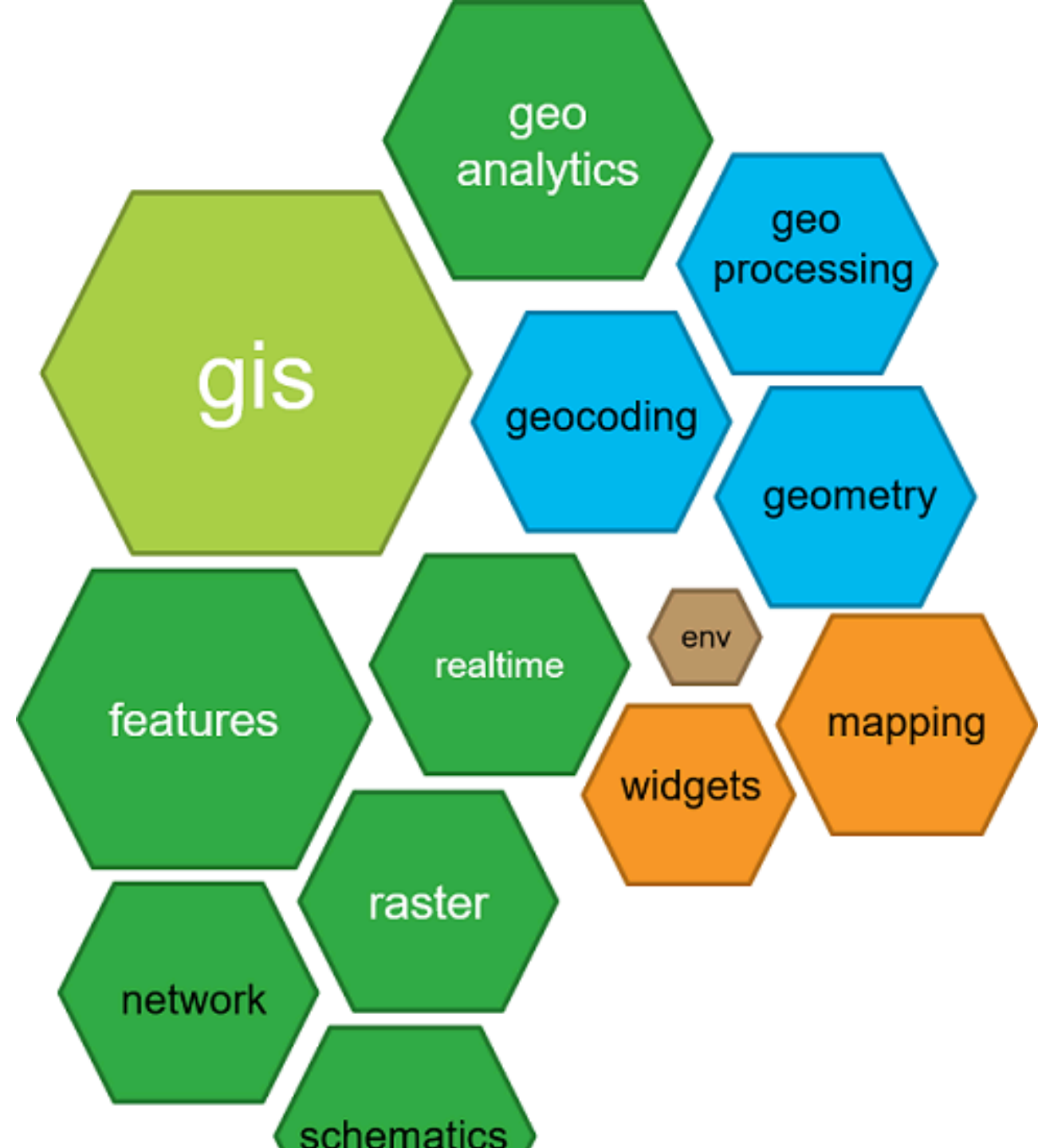
amani@esri.com

Topics Covered

- What is the ArcGIS API for Python?

- What can you do with it? (functionality)

- GIS Module

- Scripting workflows for
  - Org Administrators
  - Content Publishers
  - GIS Analysts and Data Scientists
  - Power Users and Developers

- Install

What is the ArcGIS API for Python?

Overview of the ArcGIS API for Python

- A Pythonic GIS API
  - Corresponds to best practices
  - Uses standard Python constructs
  - Data structures with clean, readable idioms
- Easy for a Python programmer to use ArcGIS
- Easy for an ArcGIS user to script and automate their GIS

ArcGIS API for Python vs ArcPy

ArcGIS API for Python

- Script against a portal
  - ArcGIS Online or ArcGIS Enterprise
  - Python 3.x

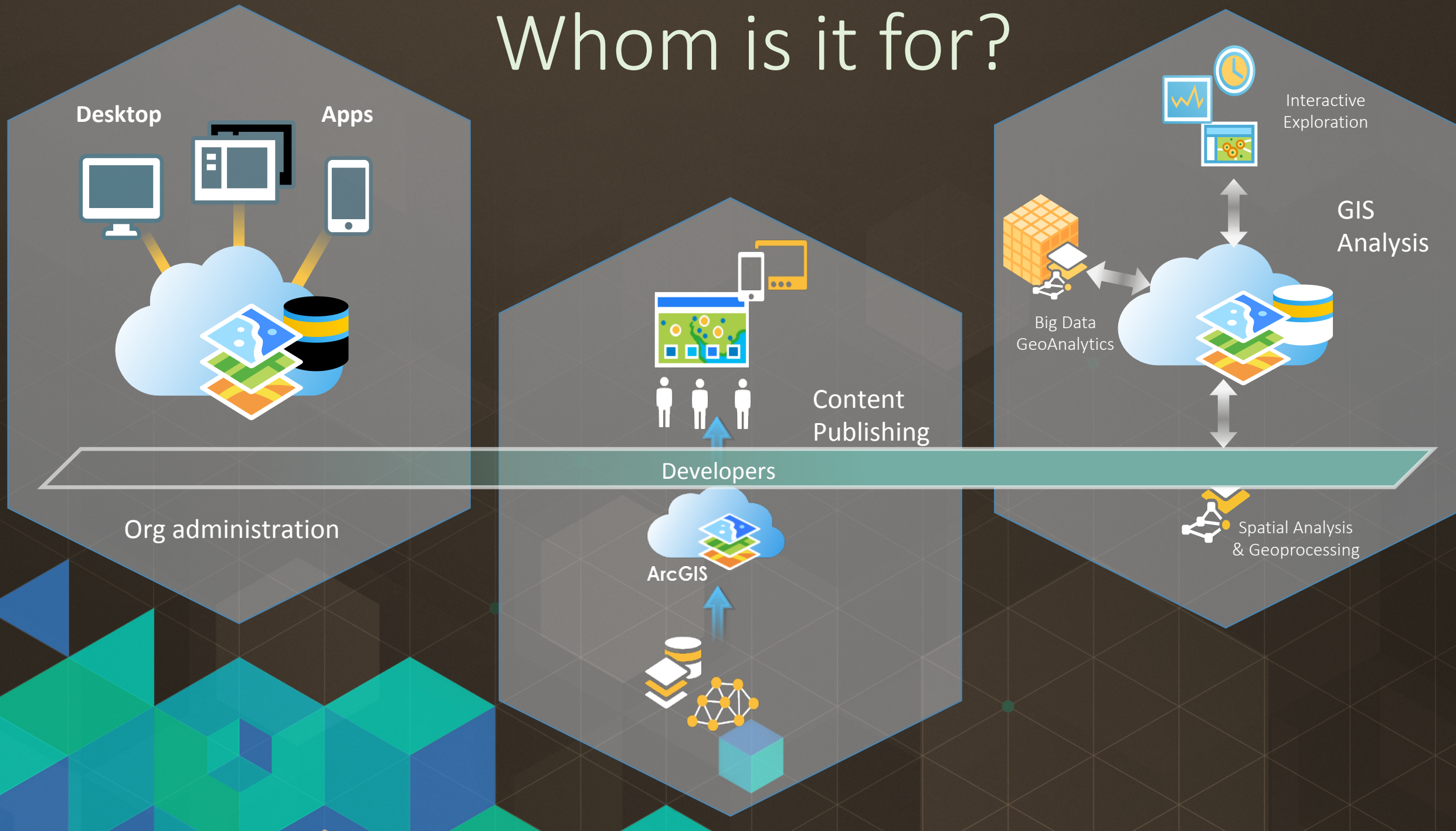- Analysis, Portal Admin, Content Creation, Big Data Analysis

ArcPy

- ArcGIS Desktop
  - ArcMap – Python 2.x
  - ArcGIS Pro – 3.x

- Mostly geoprocessing
- Some map automation

Four different groups working with the ArcGIS API for Python

- Org Administrators
- Content Publishers
- GIS Analysts and Data Scientists
- Power Users/Developers

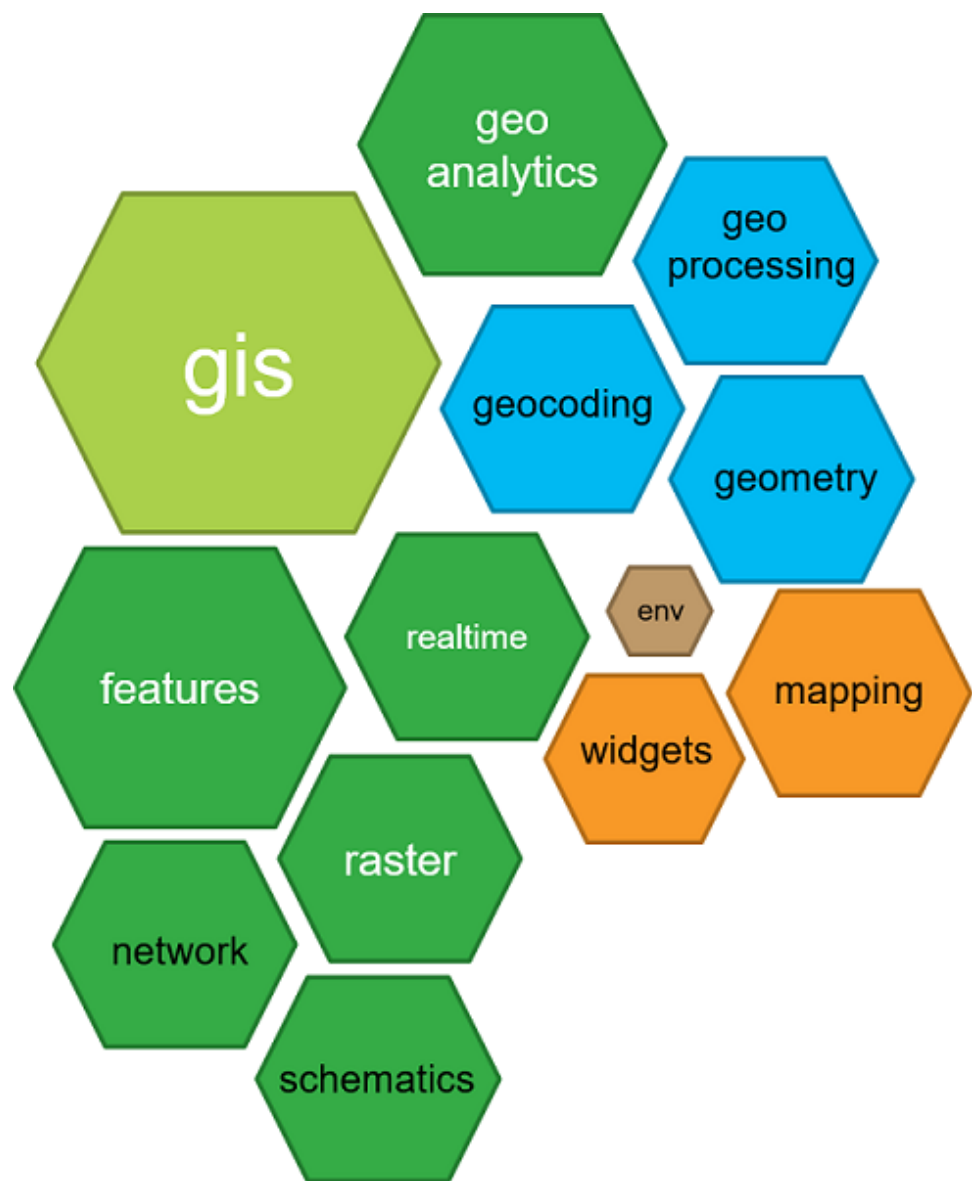## Automate Web GIS management

- Populate portal with users, groups

- Clone portals

- Re assign user content

- Perform comprehensive content search

- Determine item relationship

- Create reports of users, their items

Automate content creation

- Automate content publishing during off peak hours

- Update tiles and features from a known database

- Replicate development environment content to production

- Inspect and update items with broken service links

- Access big data tools programmatically

- Utilize rich 3rd party Python packages for data analysis

- Create rich charts, graphs, embed 2D and 3D maps in Jupyter Notebook environment

- Share your research with data and notes with peers

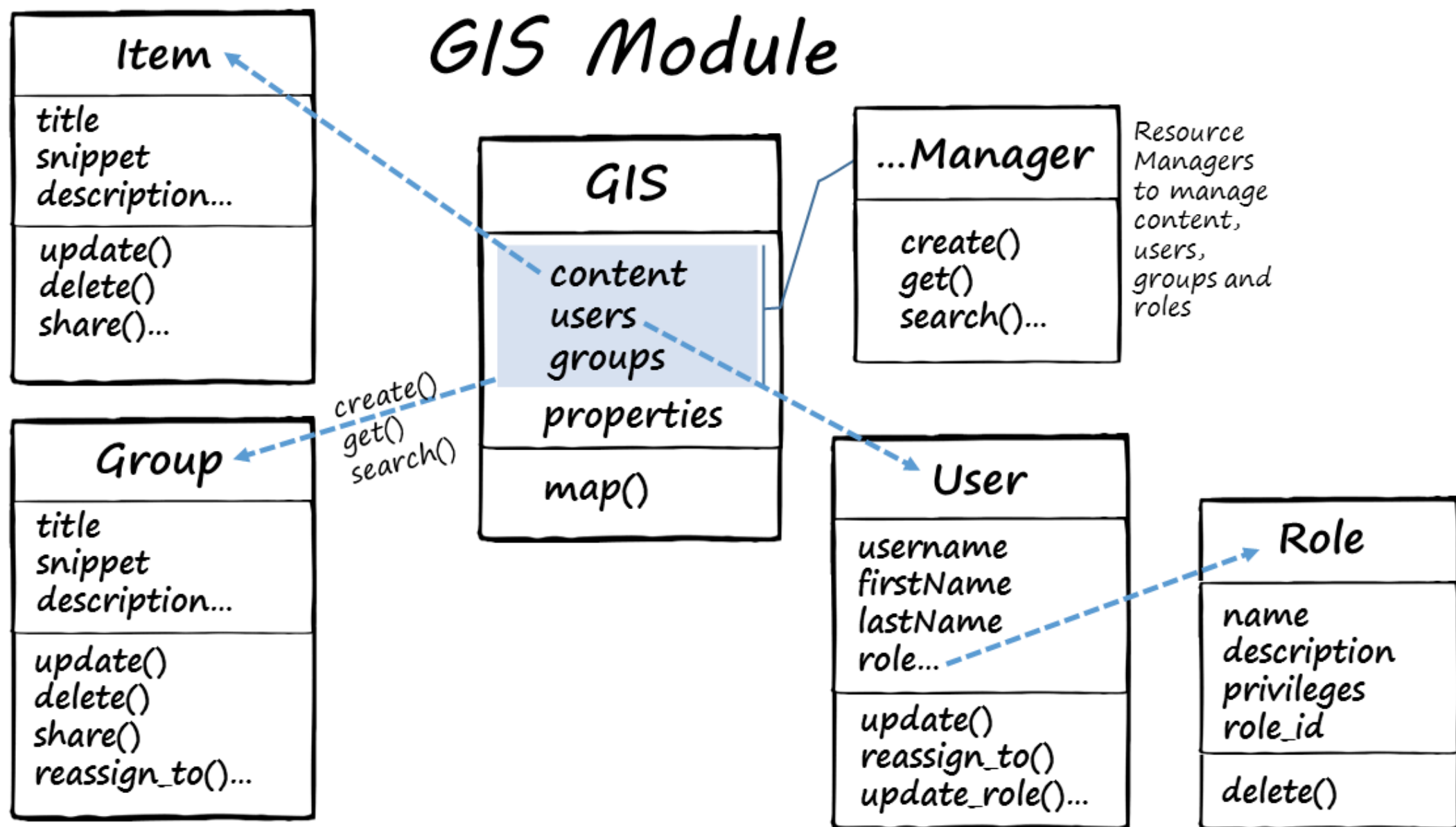## Reproducible research

Demo:

Try it live!!!

@

http://notebooks.esri.com

Introducing the GIS Module

Your gateway to scripting a Web GIS

GIS Module

Item

title
snippet
description...

update()
delete()
share()...

GIS

content
users
groups

properties

map()

...Manager

create()
get()
search()...

Resource Managers to manage content, users, groups and roles

create()
get()
search()

Group

title
snippet
description...

update()
delete()
share()
reassign_to()...

User

username
firstName
lastName
role...

update()
reassign_to()
update_role()...

Role

name
description
privileges
role_id

delete()

Demo:

Connecting to the GIS Module
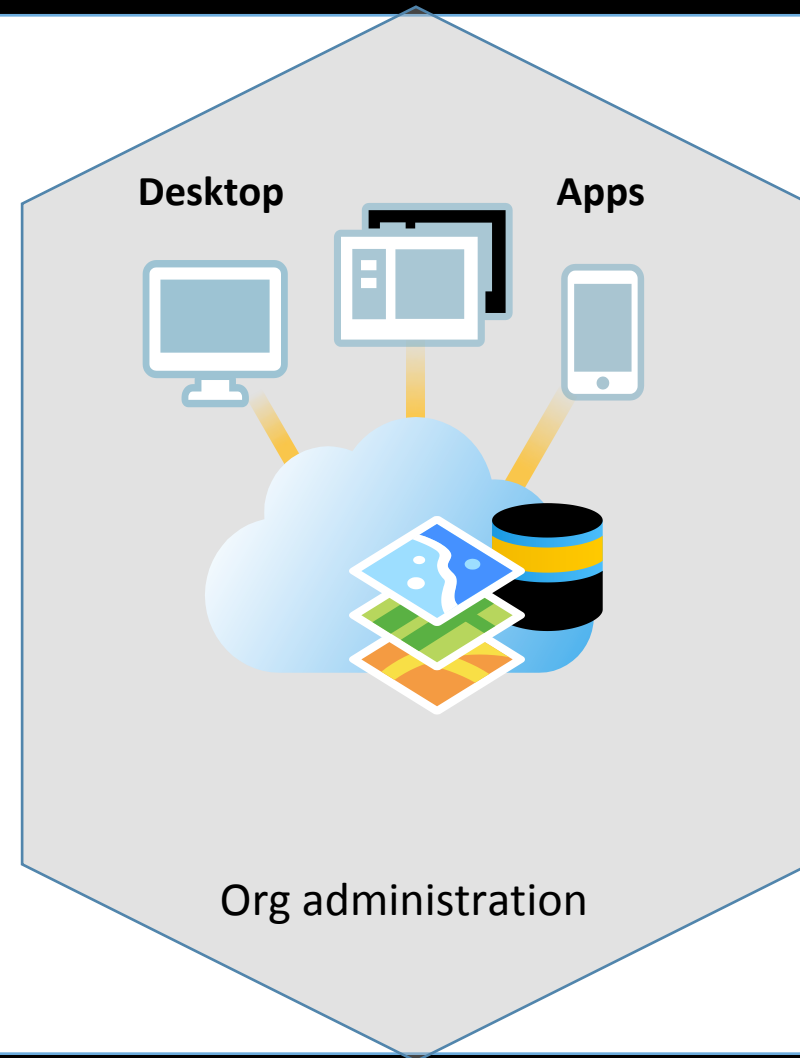
Different authentication schemes

- anonymous users
- built-in users
- users using LDAP, via
  - Basic authentication
  - Portal tier authentication
- users using Integrated Windows Authentication (IWA) through NTLM or Kerberos
- smart card users / PKI authentication using certificate and key files
- users connected to an ArcGIS Enterprise instance using ArcGIS Pro

User Workflows: | Org Administrators

Demo:

Workflows for

Org

Administrators

Desktop

Apps

Org administration

User Workflows: Content Publishers

Demo:

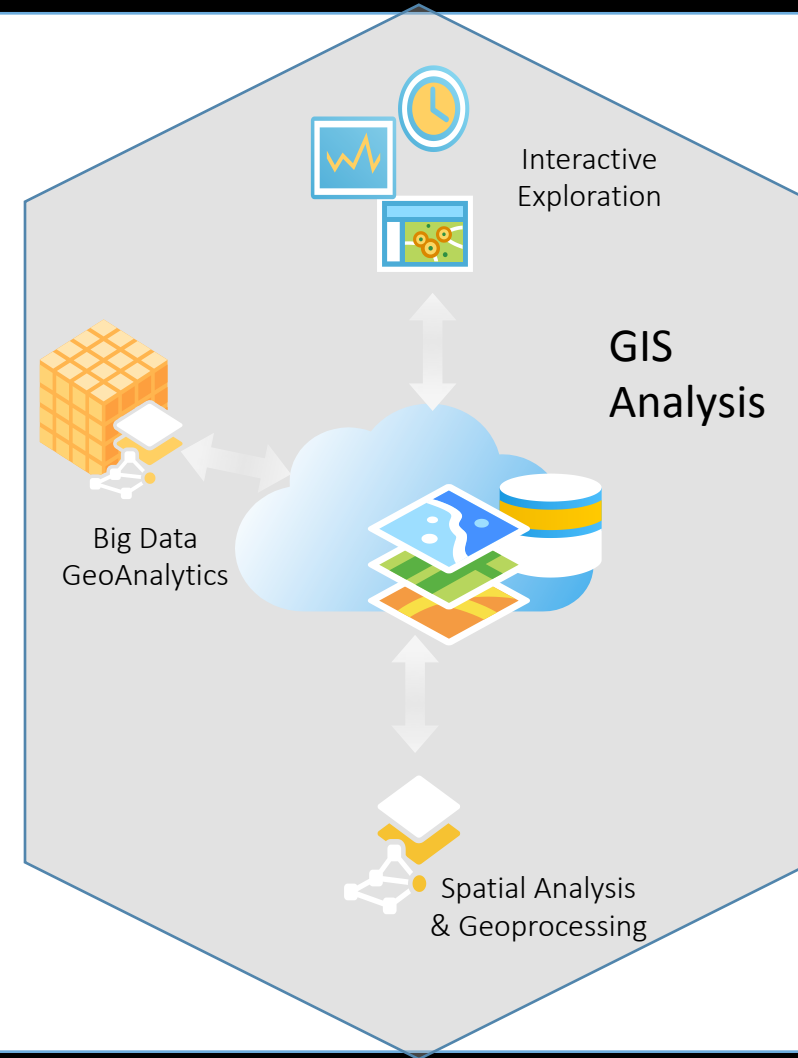Workflows for Content Publishers

Content Publishing

User Workflows: GIS Analysts and Data Scientists

Demo:

Workflows for GIS Analysts and Data Scientists

[California forest fires sample](#)

User Workflows

Power Users/Developers

Demo:

Workflows for

Power Users/
Developers

[Jupyter Dashboard Sample](#)

Developers

Installing the API

- You will install the API using Conda
  - Popular package and environment manager application
- First need to get Conda
  - ArcGIS Pro - YES
    - Conda is already on your computer
  - ArcGIS Pro – NO
    - Install the latest version of Anaconda for Python
- Install arcgis package
  - In a command prompt: conda install -c esri arcgis
- Start jupyter notebook
  - Test the install

- Online Documentation

Q and A Session with

Atma Mani

Product Engineer – ArcGIS API for Python

esri | THE SCIENCE OF WHERE