



Useful Python Libraries for The GIS Professional

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Demo Theater

4 parts

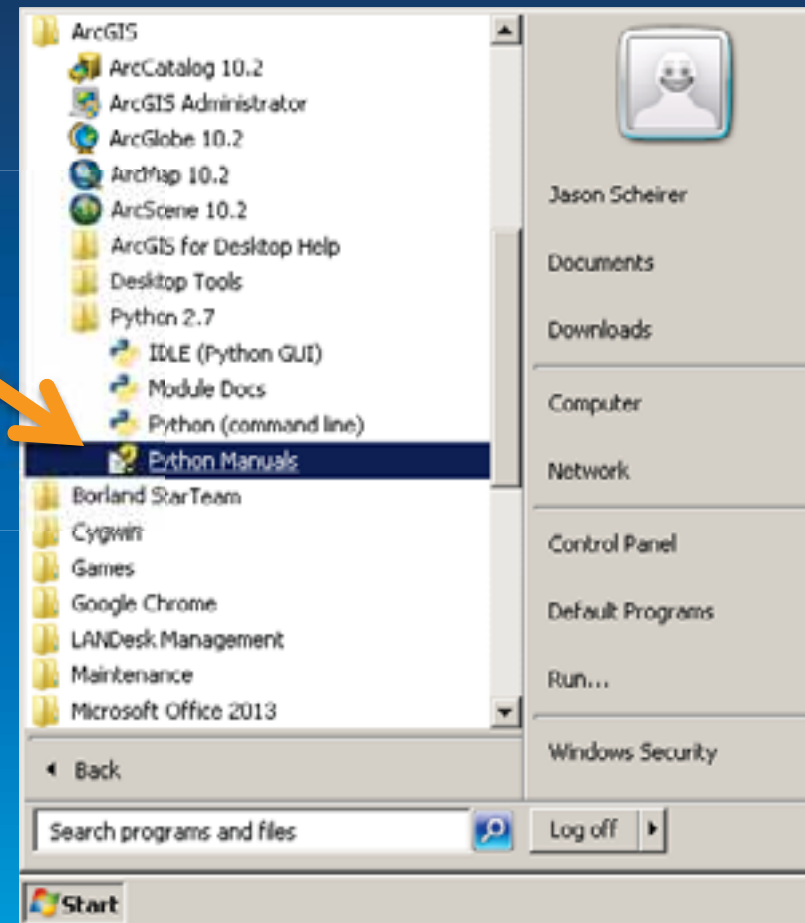
- **Data Formats**
- **Networking**
- **Data Structures/Algorithms**
- **High-Performance Computing**

Resources

- <http://arcpy.wordpress.com/>

The Standard Library is Large, Powerful, Well-Documented

- <http://docs.python.org>
- Installed with Python/ArcGIS



Data Formats

- XML
- JSON
- CSV
- Excel
- PDF

Three main XML options in the standard library

- **SAX**
 - Can handle huge datasets
 - Hard to use, verbose to code against
- **DOM**
 - Familiar: Javascript uses the DOM
 - Easy (ish)
- **Etree**
 - Feels like Python
 - Extremely easy and concise to accomplish common/simple tasks

JSON

- `json` module

CSV

- **csv module**

Excel

- `xlrd` (third-party, included with ArcGIS)
- `xlwt` (third-party, included with ArcGIS)

PDF

- `arcpy.mapping.PDFDocument`
- `reportlab` (**third-party**)

Networking

- **Calls to HTTP servers**
 - `urllib2`
 - `requests` (**third-party**)

Data Structures and Algorithms

- `itertools`
- `collections`
- `struct`
- `numpy`

High-Performance Computing and Data

- **numpy (third-party, bundled with ArcGIS)**



Understanding our world.