



# North West Florida Python/Perl Working Group (NWFPUG)

12 DECEMBER 2016

# Agenda

- ▶ Purpose
- ▶ Expectations
- ▶ Why Python?
- ▶ How to get started
- ▶ Online Resources
- ▶ Online Presence

# Purpose

- ▶ NWFPUG is a local Python/Perl user group (This meeting will focus on Python)
- ▶ Aim to foster collaboration between members, local researchers and schools, and other groups on scientific projects
- ▶ Create interesting and hands-on projects for robotics using Raspberry Pi and Arduino just to name a couple
- ▶ Spread the Python message
  - ▶ Use Python at work
  - ▶ Use as a first language for kids
  - ▶ Contribute to the Python ecosystem

# Expectations

- ▶ Meet every month or as often as needed
- ▶ Select projects to work on as a group
- ▶ Collaborate on open source projects
- ▶ Assist each other and local school kids and educators
- ▶ Present interesting solutions to certain problems
- ▶ Share our solutions and work with the Python community world wide
- ▶ Tutorials and introductory sessions

# Why Python?

- ▶ A complete programming framework
  - ▶ Free & open source
  - ▶ Runs natively on Windows, Linux, and OSX
  - ▶ Scales well from small scripts to large projects
  - ▶ Interoperable with other languages like Matlab, C/C++, Fortran
  - ▶ Symbolic Computation Engine
- ▶ Large and active community
- ▶ Large collection of scientific libraries
  - ▶ Machine learning
  - ▶ Image processing
  - ▶ Data processing and visualization
  - ▶ Documentation system
  - ▶ Parallel processing
  - ▶ Database access
- ▶ Used by large corporations and national labs

# How to get started

- ▶ Python distributions
  - ▶ Anaconda
  - ▶ Canopy
  - ▶ Vanilla Python
- ▶ Editors
  - ▶ Vim
  - ▶ Notepad++ (Windows)
  - ▶ Textwrangler (OS X)
  - ▶ Qpad/Gedit (Linux)
  - ▶ Sublime Text
- ▶ IDEs
  - ▶ Vim
  - ▶ PyCharm
  - ▶ Spyder
  - ▶ VStudio Plugin
  - ▶ Eclipse plugin
  - ▶ Netbeans
- ▶ Command Line
  - ▶ Ipython
  - ▶ Jupyter Notebook
  - ▶ Python shell

# Online Resources

- ▶ A gallery of interesting IPython Notebooks:  
<https://github.com/ipython/ipython/wiki/A-gallery-of-interesting-IPython-Notebooks#introductory-tutorials>
- ▶ Wakari: <https://wakari.io/gallery>
- ▶ IPython/Jupyter Notebook Gallery: <http://nb.bianp.net/sort/views/>
- ▶ Python Tutorials: <https://docs.python.org/2/tutorial/>
- ▶ Safari Books Online: <http://techbus.safaribooksonline.com/alltitles>
  - ▶ Free for DoD
  - ▶ Books and Video Lectures/Tutorials
- ▶ O'Reilly Online (online execution):  
<https://www.oreilly.com/learning/regex-golf-with-peter-norvig>
- ▶ Tutorials Point (online execution):  
[http://www.tutorialspoint.com/execute\\_python\\_online.php](http://www.tutorialspoint.com/execute_python_online.php)

# Online Presence

- ▶ Reserved nwfug for most social media outlets
  - ▶ Twitter (@nwfug)
  - ▶ Gmail/Google+ (nwfug@gmail.com)
  - ▶ Blogspot (nwfug.blogspot.com)
  - ▶ Youtube (nwfug)
  - ▶ Github (hithub.com/nwfug)

# Next Session (Suggestions)

- ▶ HDF5 & Pandas (Touma)
  - ▶ Read/write HDF5 files using hdf5py & pandas
  - ▶ Process data frames and time series using Pandas
- ▶ Image Processing (Touma)
  - ▶ Basic concepts
    - ▶ Edge detection
    - ▶ Corner detection
    - ▶ Histograms
  - ▶ OpenCV and scikit.image
- ▶ Python interface with C,C++, & Fortran (Feb meeting)