



A Public Repository of python resources

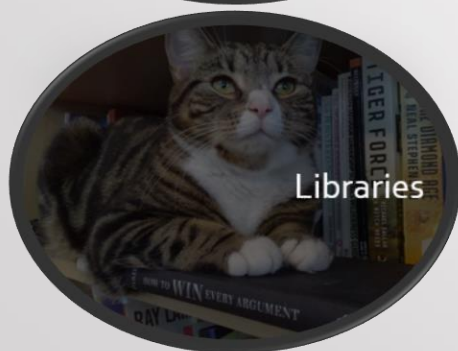
Subtitle

Abstract

This presentation will be of a slightly different format than our usual student seminars. Instead of being a presentation on my specific research, it will be a presentation regarding the resources available for learning python. Before coming to BU, I had never used python. As I learned more about programming, I came to appreciate the utility of python and began seriously studying the language.

Python is a robust and highly popular open source programming language. As result, there is a wealth of resources available. However, the vastness of information can make it difficult to know where to start, or how to know which resources are the most worthwhile. The motivation behind this presentation is to help others learn python, or become aware of resources they may otherwise have not known about. This presentation will cover some general coding and python basics, the most important best practices to be aware of, important python libraries for astronomy, and, most importantly, a repository of some of the best resources I have found for python and coding in general.

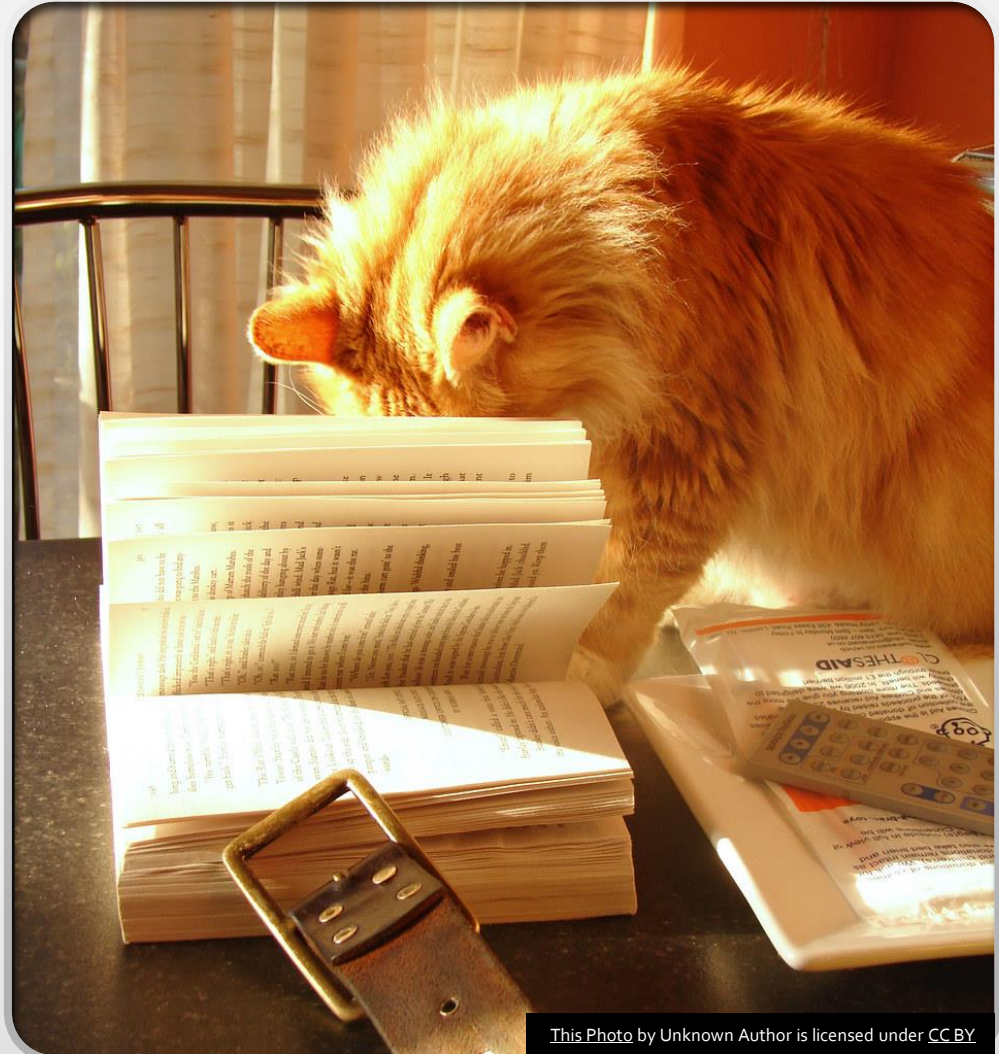
Outline



The Repository

The Repository

- GitHub
- Open for collaboration
- <https://github.com/mhallum/important-python-resources.git>





Installing Python and Libraries

Installing Python and Libraries

- Python 2 vs. Python 3
 - Python 3!
- Website:
<https://www.python.org/>
- PyPi
- Pip



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A photograph of a small, grey and white tabby kitten standing on a black computer keyboard. The kitten is looking down at the keys. In the background, there is a window and a metal wire rack. The image has a dark, semi-transparent overlay.

Editors

Editors

- Visual Studio Code
- Atom
- Jupyter Notebook
- Pycharm
- Spyder
- Default



A close-up photograph of a ginger and white kitten. The kitten is looking intently at a blue and grey computer mouse toy that is hanging in front of its face. The kitten's eyes are wide and focused on the mouse. The background is dark and out of focus.

Basics and Best Practices



Basics

- Objects
- Print
- comments
- dir
- help
- Modules
- Packages
- <https://github.com/astropy/astropy>
- dunder

A ginger and white cat is sitting on the left side of the slide, next to a white computer mouse. The cat's head is turned towards the mouse. The background of the slide is light gray with a blue and black diagonal stripe running from the top left towards the bottom right.

Best Practices

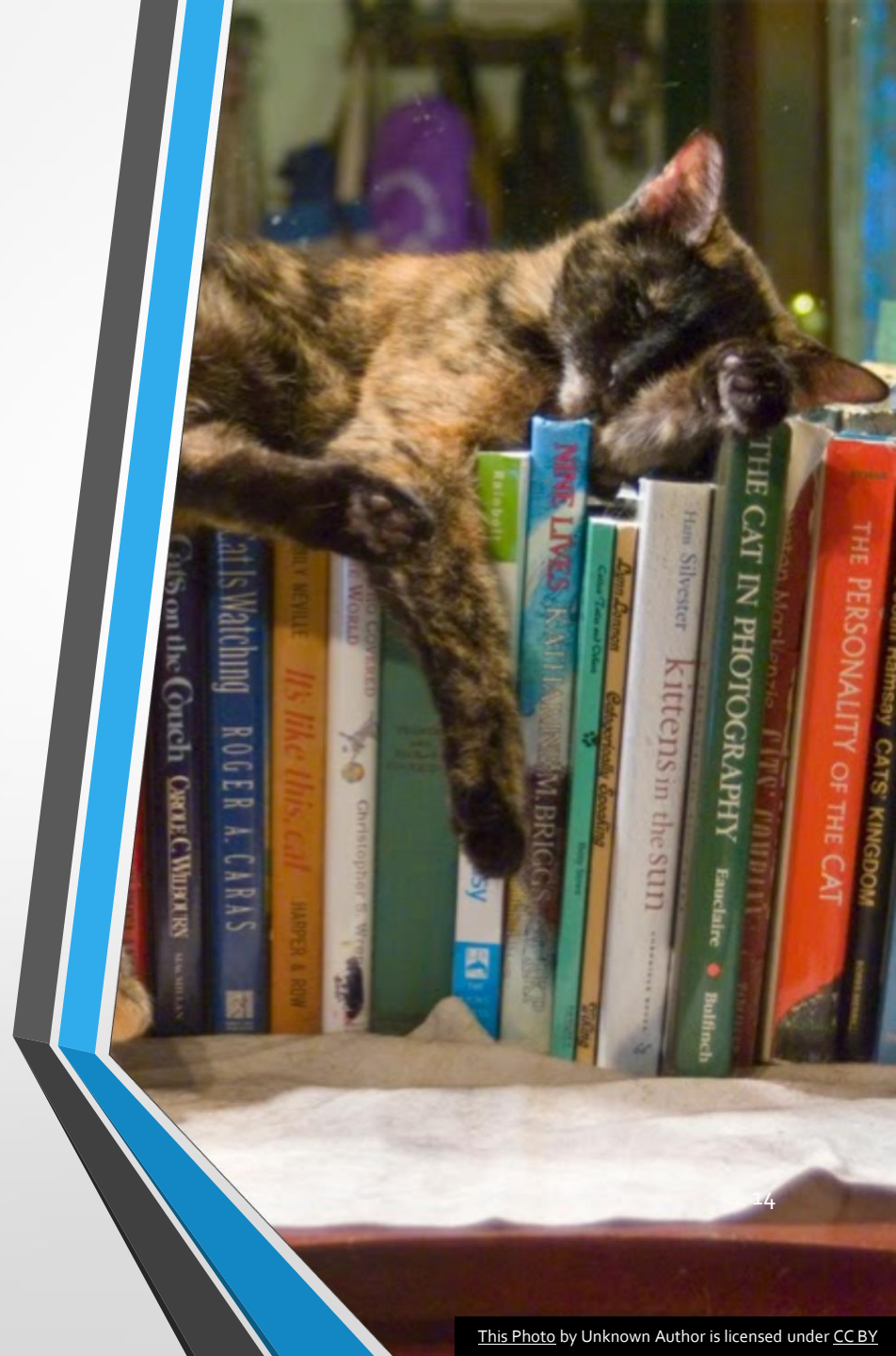
- Pep 8 <https://www.python.org/dev/peps/pep-0008/>
- 4 spaces
- Variables and functions are lower case with _ for joining multiple words.
- Classes are CamelCase (but instances are lowercase).
- Private variables/functions/etc., begin with _.
- Use virtual environments

A tabby cat with white paws and chest is sitting on a bookshelf. The cat is looking directly at the camera. Behind the cat are several books, including 'TIGER FORCE', 'THE DIAMOND AGE', and 'HOW TO WIN EVERY ARGUMENT'. The word 'Libraries' is written in large white letters over the right side of the image.

Libraries

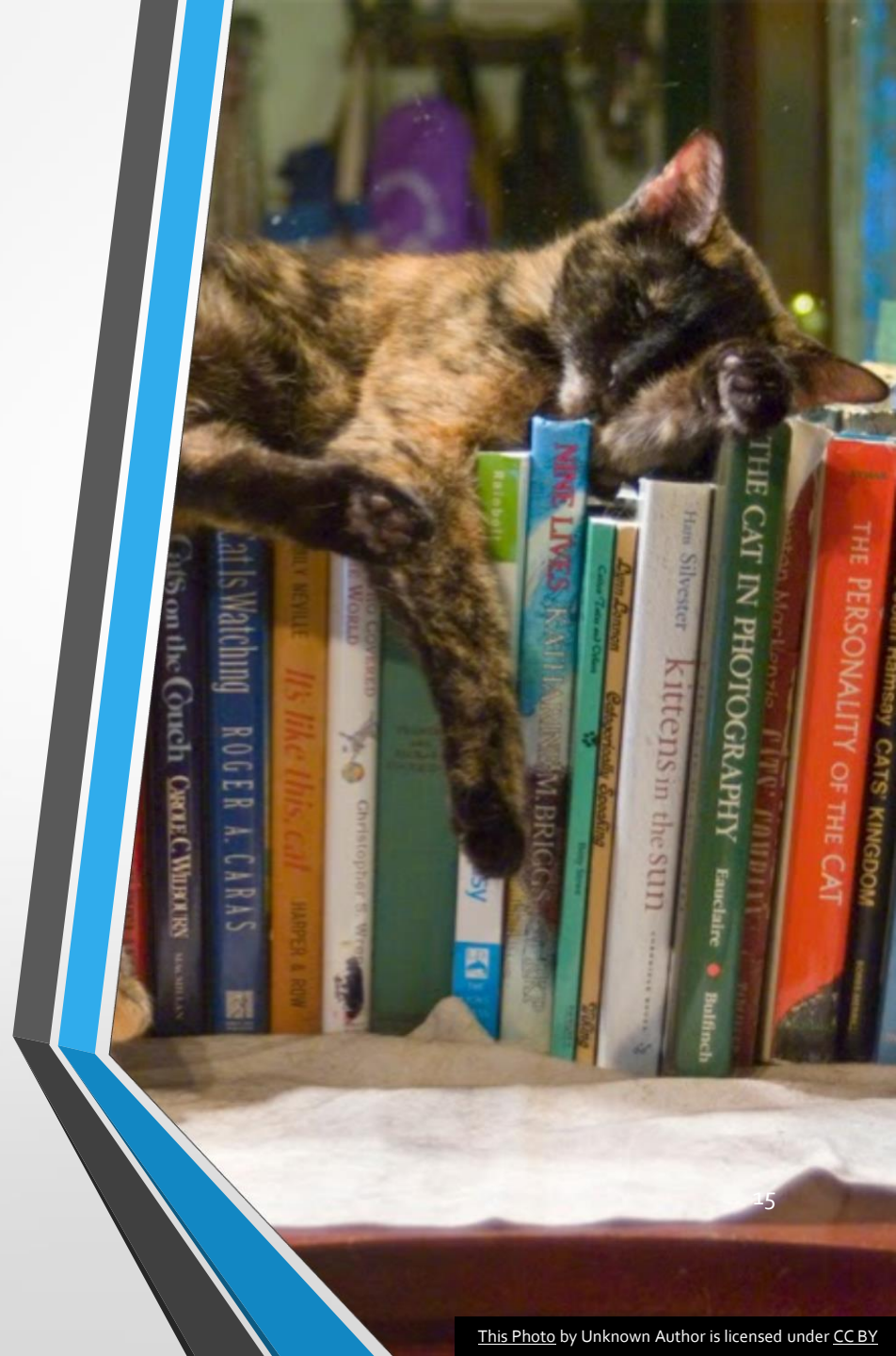
Standard

- os
- pathlib
- glob
- pickle
- argparse
- datetime
- math
- statistics



Third Party

- matplotlib
- pandas
- numpy
- scipy
- astropy
<https://www.astropy.org/>
- ccdproc
- specutils



A bronze statue of a cat with its kittens on a stone base. The cat is lying down, facing forward, with its head slightly raised. It has large, pointed ears and a dark, triangular nose. Its body is covered in a fine, grid-like texture. Two small kittens are positioned in front of the cat, one on the left and one on the right. The entire sculpture is mounted on a dark, rectangular stone base. The background is dark and out of focus.

Git

Git

- Version control.
- <https://git-scm.com/>
- Stage
- Commit
- Push





Resources

Resources

- Previously referenced websites
- Real Python <https://realpython.com/>
- Medium <https://medium.com/>
- YouTube
- Udemy Courses
<https://www.udemy.com/>
 - Wait for sales.



A black and white cat with green eyes is looking up, with one paw raised. The cat has a white patch on its chest and a white paw. The background is dark blue and light beige.

Questions?