

Introduction to Python

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What is Python?

a general programming language, popular for scientific computing

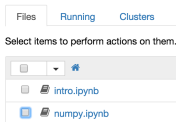
- ▶ top 5 most popular language
- ▶ fully open source, *i.e.*, free
- ▶ many high-quality numerical packages
 - *e.g.*, NumPy, SciPy, TensorFlow, PyTorch

Setting up Python

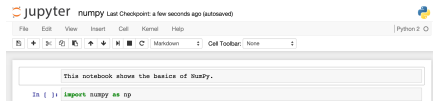
- ▶ many possible choices
- ▶ our suggestions:
 - Python 3.9
 - Pip
- ▶ installing packages
 - `pip install numpy`
 - `pip install matplotlib`
 - `pip install cvxpy`
 - `pip install jupyter`

Jupyter notebooks

- ▶ a Jupyter notebook is an interactive file run in your browser
- ▶ launch from command line with `jupyter notebook`
- ▶ notebooks in the launch folder are listed



- ▶ click on a notebook to open it
- ▶ a new page should open in your browser that looks like



Coding in a Jupyter notebook

- ▶ the Jupyter notebook is organized into cells
- ▶ you can type code directly into a cell

```
In [ ]: print "Hello world!"
```

- ▶ you can run a cell by clicking it to select it, and then either clicking on the play button in the toolbar or pressing Shift + Enter



- ▶ the output of the cell will be displayed after it is run

```
In [1]: print "Hello world!"
```

```
Hello world!
```

- ▶ the menu bar will contain options for creating and deleting cells

File Edit View Insert Cell Kernel Help

- ▶ make sure to periodically save your progress by clicking on the save button in the toolbar

