Python for Scientific Computing

a weekly graduate seminar on techniques for scientific programming

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Python has seen wide adoption in the scientific community for data analysis, simulation, prototyping, and visualization. It provides a simple, yet powerful means to build applications. This seminar introduces python and its use in scientific computing.

- Flipped course format:
  - We'll work through interactive notebooks *outside of class*
  - Class time will be used for exercises that we discuss together
  - Use **slack** for out-of-class communication (and learn how to integrate **github** + python + slack)
  - Grading is based on participation
    - Sharing examples and discussion
- Advanced undergrads welcomed

- Topics include:
  - **Python**
  - Version control with **git**/**github**
  - **Jupyter** notebooks /workflow management
  - The **NumPy** array package
  - The **SciPy** tools and basics of numerical methods
  - **Matplotlib** and **Plot.ly** for visualization
  - **SymPy** for symbolic mathematics
  - **Pandas** and the dataframe
  - Building applications
  - Interfacing with Fortran/C/C++
- Details:
  - PHY 546, Spring 2018
  - Mondays, 3:00-3:53pm

Note: we use a flipped format—you must have a laptop you can bring to class