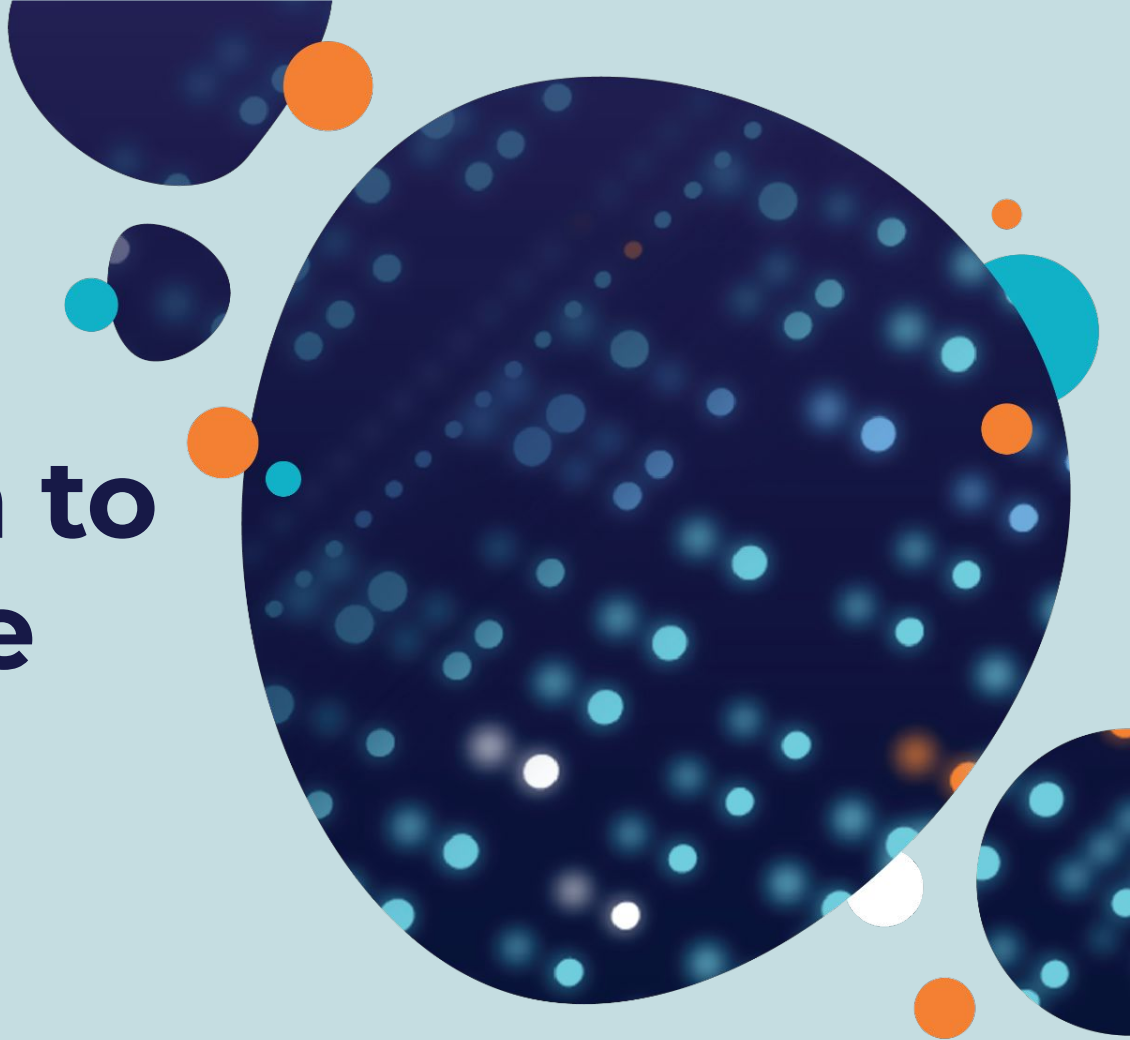




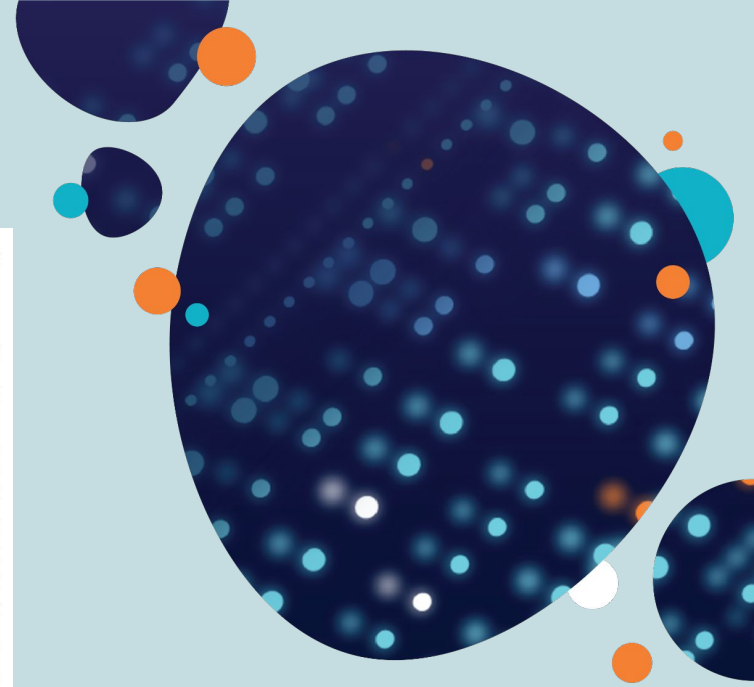
Introduction to Data Science Projects

October 10, 2024



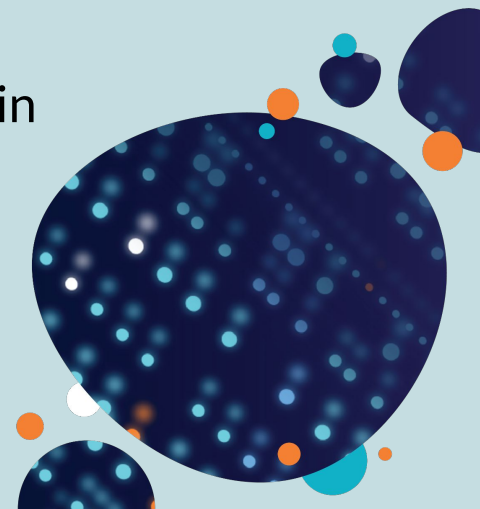


Please check in!



What is Data Science?

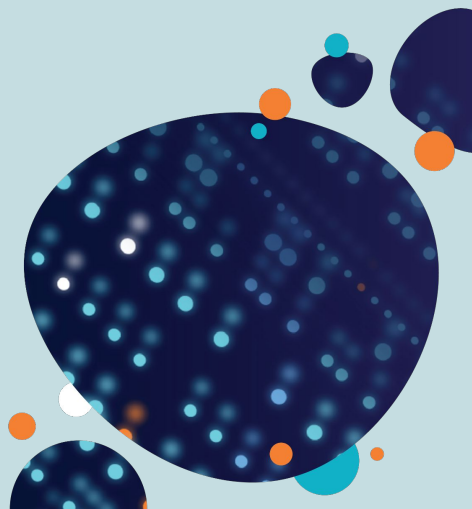
- While there is no one true definition of data science, generally:
- Combination of statistics and computer science designed to analyze large sets of data
- Usually uses machine learning and AI
- Requires high levels of research and specialized domain knowledge to draw conclusions



Data Science Project Essentials



- Version Control: Git and Github
- IDE
- Programming Language and Virtual Environment

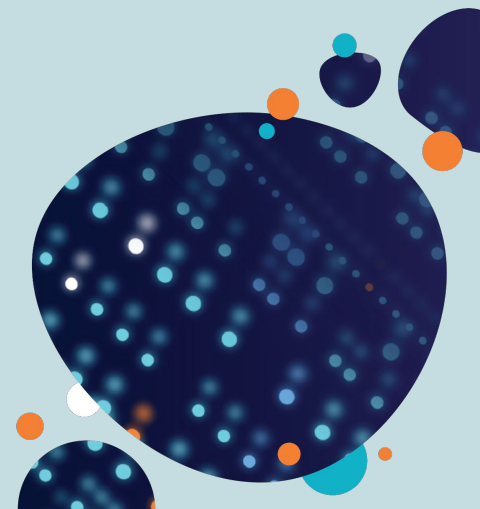


Version Control: Git and Github

- Git is a version-control scheme
 - A “save state” of sorts for your projects
 - Allows you to revert to previous versions of your project
 - Also allows for collaboration on the same project
- Github is a repository for Git
- Basic Git commands:
 - `git clone path/to/repository`
 - `git commit -m`
 - `git push`

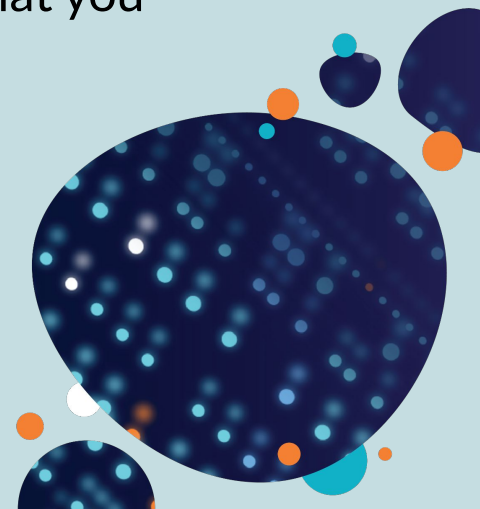
 More commands here:

<https://confluence.atlassian.com/bitbucketserver/basic-git-commands-776639767.html>



What's an IDE?

- Stands for “Integrated Development Environment”
- Is a place where you can create, run, and test your code
 - Often has convenient shortcuts/tools that you can use for your projects
- The one you use depends on your preferences and what you plan to work on.
- Examples include Visual Studio Code, Android Studio



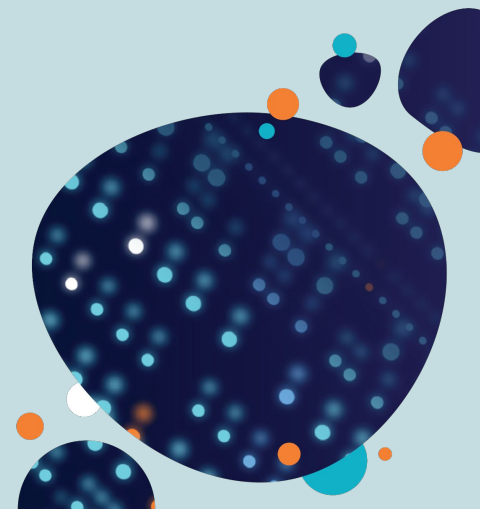
Virtual Environments (venv)

- Virtual environments are virtual spaces separate from your installed programs
- This allows you to avoid messing with libraries with other projects
 - Also allows you to work on a project with different versions of the same language, e.g. Python 10.3 vs. Python 10.4
- Examples: conda



Create a venv with pip:

<https://www.geeksforgeeks.org/python-virtual-environment/>

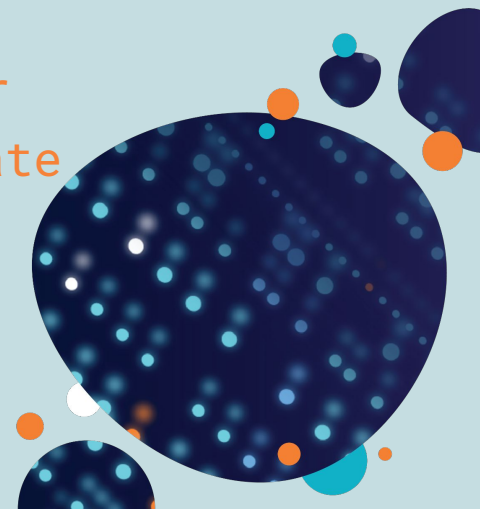


Data Science VS Code Setup

- Install VS Code here: <https://code.visualstudio.com/>
- Install Python, checking the box Add Python to PATH:
<https://www.python.org/downloads/>
- Install Anaconda, add it to system PATH: <https://www.anaconda.com/download>
- Install Python extension in VS Code
- In VS Code terminal:
 - Install Jupyter by running `conda install jupyter`
 - Create a conda environment by running `conda create -n myenv python=3.14`
- Install Jupyter extension in VS Code

 **More commands here:**

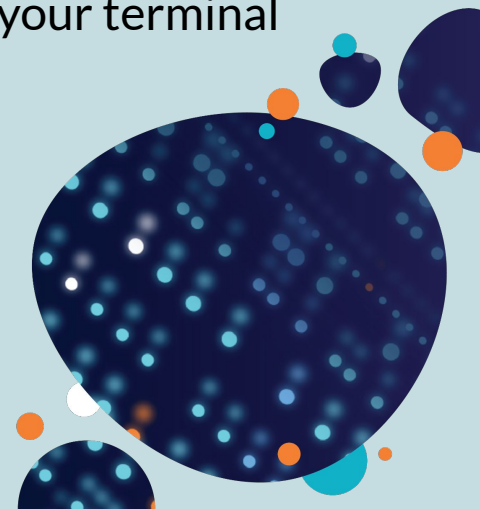
<https://confluence.atlassian.com/bitbucketserver/basic-git-commands-776639767.html>



Cloning the Notebook

- Create a Github account: <https://github.com/>
- Download Git: <https://git-scm.com/downloads>
- Next, download Github desktop: <https://github.com/apps/desktop>
- Clone the repository here in your terminal:
<https://github.com/couchsnail/ds3-workshops>
- Open the Notebook and run `conda activate myenv` in your terminal
- Select `myenv` as the Kernel for the Notebook
- The Notebook is a simplified version of how you'd start a data science project. Try out some of the problems for yourself!

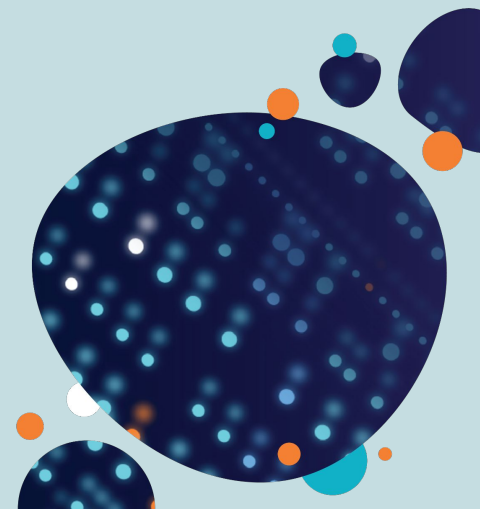
 **Note:** If it says `pandas` or `numpy` doesn't exist, run
`conda install pandas numpy`



Further Resources

- A more in-depth tutorial to Git and Github:
<https://product.hubspot.com/blog/git-and-github-tutorial-for-beginners>
- Github and VS Code tutorial: <https://vscode.github.com/>
- How to use Jupyter Notebooks on VS Code:
<https://code.visualstudio.com/docs/datascience/data-science-tutorial>

 **Note: Make sure to stay connected on the DS3 Discord for further workshops!!!!**





Next Time: Intro to Web-Scraping





Leave your feedback here!