

Chapter 1.0 - Downloading Python

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SUMMARY

This lecture series introduces Python for scientific computing and data-driven modeling, emphasizing the importance of understanding modern computing paradigms, including machine learning. The instructor provides guidance on setting up Python using Anaconda, utilizing Jupyter Notebooks and VS Code for programming, and encourages participants to engage with GitHub for code management.

- *The course covers Python programming for scientific computing and data-driven modeling.*
- *Anaconda is recommended as the preferred distribution for installing Python.*
- *Jupyter Notebooks and VS Code are highlighted as user-friendly programming environments.*
- *Participants are encouraged to set up a GitHub account for code management and collaboration.*
- *Continuous upgrades to Python installations are advised for accessing the latest features.*
- *The course will include a variety of lectures on different computing paradigms and machine learning applications.*

welcome to these series of lectures on python and scientific Computing datadriven modeling so what this is is a series of lectures that I'm going to be delivering that essentially walks through a diverse range of computing paradigms as well as introduction to machine learning and really with this idea of bringing you into context of understanding what modern Computing is doing both in terms of standard scientific Computing but also

datadriven models which include machine learning so the first thing I want to do is point out that we're going to start using python as our main language to be doing all of our programming you can find more information here at my website faculty Washington ad. Cuts as well as my GitHub page which is here this GitHub will actually have all the code that you're going to see throughout the lectures and so I would recommend you

clone it and so that that way you actually have all of the resources available to you for programming so the first thing though is to get python so python is an open source distribution and there are many ways to get different distributions of this but I'm going to recommend one that's very simple and this is just to go to anaconda.com Anaconda is a distribution it's free for individuals and I would just recommend you download this so [anon.com](https://anaconda.com) here's the

website for this and what you're going to see here is in fact you can go here to the individual license or individual addition is what you're going to do Under the products right so once you're there you can hit that it's going to give you an option of downloading whichever version you want to look at which it's for a Mac or a PC and then you're just going to hit the download button that will install the latest

version of python and one of the things you're going to do is often upgrade the installations as you go along as you work with python because python is continuously being upgraded in many of its features but this is the resource anon.com easy enough to install just from a you know double click now once you've installed it you're going to install an anaconda in the applications folder of your computer and

when you doubleclick that this is what's going to come up here is it's you can launch here you can either do it through command window or you just double click and this is the the kind of architecture it's going to bring up and then it's going to allow you some different Frameworks in which to do Python Programming so the ones that we're going to be mostly concerned with is something like a Jupiter notebook or vs code these

are the two that I would recommend most to you in sort of learning how a program Jupiter notebooks are especially interesting they're very easy to use very intuitive simple to use and you can use it through a web browser as the interface as you get more sophisticated or more advanced I would recommend you switch to vs code which is sort of more of a standard architecture that everybody uses for more serious programming either one of these is

fine to program with because they're both simple to use but just pick one start getting used to it start using using it for yourself let's first start talking about the jupyter notebook however the Jupiter notebook once you launch this this is the kind of thing it's going to give you it's going to give you it's going to launch in a directory now in the directory I have here I have it in a GitHub link under scientific Computing so whatever your

directory structure is in your computer you might want to have it Point towards where you're going to be doing a lot of your Computing I would strongly recommend everybody get a GitHub page and to get and program everything and have everything uploaded to their GitHub Pages the GitHub can be private or it can be public and often when you write your code you want to have it initially as private and then once you have code done you can make it public but this is

be the architectures it shows me the files that I have here here's the couple files that I have in my directory now once you launch one of these it's going to give you you know you can either open a new file for instance you go over here to New Python 3 notebook and then that will just open that there's some other options there but typically you just open a new Jupiter notebook and now you have a prompt like this and you can just

Pro start programming away inside of this Jupiter notebook framework alternatively go with VSS code and VSS code gives you sort of in some sense a little Rich programming architecture so first of all here you're going to have your directory structure these are your files sitting inside of your local directory and then you can change out of that directory and move between directories and that can easily be done right here this is sort of a command window that's directly right

there with your browser or within your VSS code window and then here's your code itself that you can execute okay and then actually over here this kind of gives you a highlight of the overall code so you can skip around in your code so vs code's a really flexible framework what I find a lot of people work within vs code AS sort of one

of the more natural Frameworks to do highle Computing all of this is just setting

up the infrastructure for you having access to Python and being able to get ready for programming everything we're going to do here so again this is a course on data driven modeling and scientific computation and what you're going to see is a a ton of lectures walking through all of the different things that we can do within this framework you can find more information here at the website and also at my GitHub I would strongly recommend

you clone this GitHub so that you have all the codes associated with the lectures