**How to Create a Professional Portfolio on GitHub That Will Help Land Your First Job in Data Science**

Your portfolio plays a vital part in telling employers why they should hire you.

Every piece of advice you reference for tips on landing a job in data science will talk about the importance of having a professional portfolio that showcases your work and gives employers the chance to take a deep dive into your personal projects.

Not only do portfolios allow employers to see the quality and thought process of your code, but they also allow them the chance to see if you have the initiative to embark on your own projects and the ability to create personal projects that make an impact or solve a real-world problem.

GitHub is the industry standard, which makes it an ideal place to host and maintain your professional portfolio. Furthermore, its additional features, such as its commit history or contributions calendar, provide employers with an idea of how regularly you add to and maintain your portfolio.

Especially for self-taught data scientists, portfolios can play a key part in determining whether an employer asks you for an interview and can provide context as to how you would fit into a company. While it may play a smaller part in the process of landing your first job as a data scientist, it cannot be underestimated the value of a solid, professional data science portfolio.

**What to include in your portfolio**

**Personal projects**

Personal projects are what you will most often find in a data science portfolio and can include everything from Titanic analyses (although you might not want to include this overdone theme) to climate modeling.

At a loss for personal project ideas? Check out the hundreds of data sets available on Kaggle for inspiration, see what others are building on Youtube, or talk to small businesses in your area to see if you can help them solve a problem using data.

While personal projects don’t necessarily have to be completely relevant to a sector you’re applying for, it can be beneficial to show employers that you’ve worked with relevant data and have been able to draw practical insights. Not only that, but it helps you understand what kind of problems need to be solved in a given industry and the different ways in which you could solve them, thus giving you a leg up on the competition.

**Assignments or class projects**

Assignments and class projects are a great idea as portfolio contributions, especially for up-and-coming undergraduate or master’s students or self-taught data scientists working through bootcamps or online learning programs.

They may not be the most mind-blowing projects, but they do add substance and can provide employers with an idea of your progression as a data scientist. It may also intrigue employers to see what they’re teaching in schools nowadays.

It can also be beneficial for contextual reasons to include a description of the assignment, the objective you were trying to achieve, and even your grade and instructor’s comments if available.

**Hackathons or contest entries**

Nothing shows an employer that you’re able to meet deadlines and work under stressful conditions quite like hackathon or contest entries.

After you’ve completed the competition, it’s a good idea to clean up your code before adding it to your portfolio. Include in the code documentation the name of the competition, the date, how long the competition ran for, a description of the competition and the problem you were trying to solve, information on the setting in which you were competing (e.g., as a team or individually, in a convention hall or at home, etc.), details on how you solved the problem, and perhaps even the results of the contest.

Hackathons or contest entries don’t have to be relevant to the job you’re applying for as employers will use them to determine how you work under pressure, the quality of work you can produce in a short period, and whether or not you can solve a problem shortly after it was given to you.

**Blog posts, articles, social media posts, etc.**

As a STEM communicator, I know the value of being able to teach something to others or the ability to guide others through important processes that you’ve experienced.

For example, I use my education and background in tech to help others achieve their goals of learning new programming languages, self-learning difficult concepts, and getting that first job in the field. I do all this through blog posts, articles, and social media. These mediums are capable of showcasing my soft skills to employers, such as my ability to communicate, teach, write, present, and tell stories.

Including blog posts, articles, social media posts, and more into your portfolio are great ways to not only showcase your soft skills as I previously mentioned, but they also give employers a sense of how you would fit into a company and if you would be able to advance at a later date. Furthermore, these key pieces show employers that you have a range in your abilities and perhaps even interests outside of your regular work.

**Create your portfolio**

1. **Select a template:**Google “html template for github pages” (or something similar) and you’ll find several pre-made templates that will include HTML, CSS, and JavaScript files that are ready to be hosted on GitHub pages. These templates come ready to go and will just need a few tweaks to make them customized for your needs. The README files will usually include everything you need to know about installing the template, the files included, additional useful resources, and licensing information.
2. **Modify the template to suit your needs:**This part will require a little knowledge of HTML and maybe CSS (although, if you’ve gotten through the process of learning data science, learning enough HTML to modify your portfolio will be a piece of cake). This part will include adding all of your personal information.
3. **Host the portfolio on GitHub and fill it with projects:**This is where your portfolio goes live, for free! I can’t improve on the tutorial found [here](https://www.geeksforgeeks.org/how-to-build-portfolio-website-and-host-it-on-github-pages/)which can be followed exactly to host the portfolio on GitHub.

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**What to include in your README file**

* **Write an introduction that tells employers exactly what they can expect to find in your portfolio:**If you’ve gotten an employer to take a look at your portfolio, congratulations! You’ve made it past the critical [7.4-second](https://towardsdatascience.com/5-things-in-your-resume-that-are-keeping-you-from-getting-your-first-job-in-data-science-1a4d474ff3e4)window that recruiters give each resume and have captured their attention long enough to steer it to your portfolio. The first thing employers should see is a crisp, concise description of what they can expect to find in your portfolio. Be informative, to the point, and clear on the projects you’ve included, and the category they fall under (personal projects, classwork, hackathon entries, articles, etc.)
* **Use a table of contents with navigation links:**If you’re like most of us, your README file is more like a short novel with tonnes of pertinent information. No matter how short and sweet you keep it, you’ll probably begin to start writing closer to thousands of words than hundreds. In this case, help employers out by creating a descriptive table of contents that includes navigation links to help them jump to exactly what they’re looking for (additionally, you’ll want to include navigation links back to the table of contents at the end of each section to facilitate quick and easy reading).
* **Add a short description of each project and each file within each project found in your repository:**As I described earlier, you’ll want to describe each of the projects an employer can expect to find in your portfolio. This description can include sub-descriptions that describe each of the files they can expect to find in a project folder. This will require a little extra work on your part but employers will be impressed by the level of detail and thought you’ve put into your portfolio-viewing experience.
* **Use formatting options such as headings and drop-downs to make your README file more readable:**One thing you’ll have noticed while reading this article is its skimmability — AKA, the ease with which you can skim the article and gather the pertinent details without having to read it line by line. I’ve achieved this by using clear formatting and headings and is something you should aspire to do in your README file. README files have vast amounts of customization potential, which means that you can organize your file using headings, section lines, bullet points, dropdowns, tables, and more. Employers have a short amount of time with which to skim candidate portfolios, so you must make it as easy as possible for them to find what they’re looking for.

**How to clean up your code before pushing it to your repository**

* **Keep your imports at the top:**An old software engineering best practice, keeping all your imports at the top is a great way to set the tone for an employer as they begin to sift through the code found in a file. Imports allow them to immediately see what tools you’re using. Not only that, but it’s a good practice for you to maintain as it improves readability and code optimization.
* **Follow language conventions:**No matter what language you’re writing your data analyses in, make sure that you’re using the proper language conventions. Each coding language comes with its own set of conventions that should be followed to ensure that anyone who reads your code can understand what it’s doing.

**[This Quick and Easy 7-Step Checklist Will Help You Write Better Python Code for Data Science](https://towardsdatascience.com/this-quick-and-easy-7-step-checklist-will-help-you-write-better-python-code-for-data-science-62f1a1f4b20c" \t "_blank)**

[This checklist will help you write clean and easy-to-manage Python code](https://towardsdatascience.com/this-quick-and-easy-7-step-checklist-will-help-you-write-better-python-code-for-data-science-62f1a1f4b20c" \t "_blank)

[towardsdatascience.com](https://towardsdatascience.com/this-quick-and-easy-7-step-checklist-will-help-you-write-better-python-code-for-data-science-62f1a1f4b20c" \t "_blank)

* **Maintain code documentation within the code and provide supporting documentation in the project repository:**Code documentation is the best way to help employers understand what your code is supposed to do, why you’ve written it that way, and how it works with other pieces of code. In-line code documentation (aka, comments) provides a clear glimpse into your logic, thought process, and also provides an English version of what your code is saying. Furthermore, it helps tie together variables and functions into an easy-to-understand story that can be understood by anyone looking at your code for the first time.

**[How to Write Good Code Documentation for Data Scientists](https://towardsdatascience.com/how-to-write-good-code-documentation-for-data-scientists-c9940aebb4f0" \t "_blank)**

[A crash course on the best practices you need to ensure that everyone understands the code you write.](https://towardsdatascience.com/how-to-write-good-code-documentation-for-data-scientists-c9940aebb4f0" \t "_blank)

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* **Use accurate variable and function names to help others understand your code:**In personal projects, it can be easy to fall into the trap of calling variables vague names and using function names that only you can understand. That’s fine while working on a project by yourself (though I wouldn’t recommend continuing this habit) but before you include it in your portfolio you should make sure that your variable and function names are crystal clear and as descriptive as can be. This helps an employer take a look at your code for the first time and know exactly what you’re trying to accomplish.

**[Software Engineering Best Practices for Data Scientists](https://towardsdatascience.com/software-engineering-best-practices-for-data-scientists-4c199ede6e03" \t "_blank)**

[A crash course on how to bridge the gap between data science and software engineering.](https://towardsdatascience.com/software-engineering-best-practices-for-data-scientists-4c199ede6e03" \t "_blank)

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**Final thoughts**

The value of a professional data science portfolio can’t be underestimated, especially when you’re looking for your first job in the field. Because you’ll have little to no applicable work experience, employers will use your portfolio to gauge your fit for the company, as well as your technical skill and soft skills. An impressive portfolio is a great way to make a statement and also stand out from other candidates, therefore putting some time and effort into it using the tips provided here can produce worthwhile results further down the road as you achieve your first job in data science.

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