Where Do We Go From Here?

> Momentum begets momentum

Reminder for the 5-1-2 Plan

- 5-1-2 is about sustainability, digestibility, and momentum for habits (to stay sharp)
- The 5-1-2 is all about keeping up your habits of working every day and learning every day.
    - 5 hours a day doing data science. This could be any part of the pipeline. This is an active activity.
    - 1 hour a day looking for openings, applying for opportunities, writing cover letters, etc...
    - 2 hours a day learning something new. Prefer active learning over passive learning.

You've been push starting a train, now it's time to keep it going!

- *Right Now* is the time when you have the latitude to focus on things that interest you the most. This is the pefect time to focus on your passion projects. Use this time to *work on problems that interest you*.
- Motivation and having fun is turbocharges your learning and results.

Hone Your Craft, every day!

- The best way to hone your craft is to **build stuff that excites you** and **have fun**. Being interested and having fun with what you're doing turbocharges your learning results.
- Working on new data science projects are 100 times more effective at building your skills than doing curriculum exercises over again.

> *Always* have an answer to the question: What have you been working on lately?

Set Yourself Up as an Expert Instead of a Student

- Lifelong learning means you'll be a student
- Literally remove "student" or "aspiring" from your LinkedIn, GitHub, etc...
- Create resource or open source projects
- Volunteer and mentor

Create and Maintain Opportunities for Structure and Practice

- Form a group that meets regularly to work on a group DS project
    - Have a standup meeting every day
    - Continue to collaborate
- Create a technical book club
- Work With a Swim Buddy
    - Work with others. Seek out opportunities to collaborate and keep building stuff!
    - Make accountability partners. **Find a swim-buddy and work on things together.**
    - Consider working through a selection from the Recommended Reading at the bottom of this document with a partner or a group. Make a book club discussion group about it, and you'll have yet another interesting thing to talk about at your interviews.

Be Your Own Publicity Agent by Publishing Your Work

- Publish **all** of your projects on GitHub.
- Add each project to your LinkedIn under Accomplishments/Projects section, then make a post about it.
- Write technical blog posts to establish and communicate your expertise.
- The only time to keep projects off of GitHub is when someone pays you to do so!
- Post on LinkedIn every time you finish a tutorial or project!

Create a Portfolio Webpage

Create a portfolio page that highlights your work.

You *do not* need to learn Web Development in order to create a portfolio page. All you need is intention, content, markdown, and GitHub pages. You don't need to learn JavaScript, Java, or anything else. You need to PUBLISH YOUR CONTENT to show that YOU KNOW YOUR STUFF!

What is your content? Your work! Your analysis! Make a little Markdown page for each one of your projects.

Every Jupyter notebook can export to an HTML file type with all of your text, code, and visuals. Go to File, Download As, then choose HTML. That's it!

Here is how to use GitHub pages to host and share your HTML content.

Here is how to learn Markdown and just enough HTML to publish what you need.

These tutorial videos, specifically "Creating Content for Your Projects with Chase Thompson", is solid gold.

90 Second Intro to Publishing Jupyter Notebooks on GitHub Pages

Consistency Beats Intensity

- Start simply so that you may simply start
- Practicing the violin for a focused 45 minutes a day beats practicing all day Sunday.
- Starting small beats overcomplicating your plan.
- Over time, practice beats talent.
- Practice also beats study.

Proper Care and Feeding of Your Network

- Connect
    - Actively seek mentoring relationships.
    - Talk to strangers, strategically. Talk shop. Share about your projects.
    - Talk about what you're working on LinedIn
- Give
    - Seek to mentor others. Mentoring builds your skills while helping others. And it feels good.
    - Sign up to give lunch & learn talks at Codeup.
    - Sign up to give talks and presentations. This establishes your expertise.
    - Find events like SOHacks or similar civic hackathons
    - Offer to mentor Coding Office hours for incoming students
- Ask/Get
    - If you only tell folks once, most business connections won't automatically remember that you're a data scientist .
    - It's your job to remind folks what you do.
    - Seek mentors
    - Remind people what you do and what opportunities you're seeking.
    - Literally tell people that you are practicing data scientist, all the time.
    - Literally ask people for introductions, referrals, and opportunities

Do Competitions to Hone Your Craft and Build Your Portfolio

- Kaggle competitions
- https://datahack.analyticsvidhya.com/
- https://www.kdnuggets.com/2019/07/hackathon-guide-aspiring-data-scientists.html
- https://www.machinehack.com/
- https://towardsdatascience.com/top-competitive-data-science-platforms-other-than-kaggle-2995e9dad93c

Interviewing Help

- Big list of common interview questions
- Framework for answering interview questions

HackerRank for Practice Problems and Interview Preparation

Be 100% sure to familiarize yourself with the HackerRank platform. You want to be familiar with HackerRank *before* an interviewer sends you a HackerRank problem set as part of their interview process. HackerRank is increasingly popular for performing candidate assessments. So, get familiar with this platform.

Specific, recommended HackerRank problem sets:

- 10 Days of Statistics
- SQL Practice Problems
- Python Practice Problems
- HackerRank's Python Cert
- HackerRank Algebra
- HackerRank Geometry
- HackerRank Probability
- Hackerrank Artificial Intelligence

How to do HackerRank Problems and Build Your GitHub Portfolio at the same time

- Make a new repository both on GitHub and your local computer. Name this repo

"HackerRank SQL Practice" or something similar that explains the language, exercise set, and platform name.
- Make a new .sql or .py file in your local repo named after the 1st exercise directions or name it first_exercise.sql, if you are unsure of what to name the file.
- Make a new file for each exercise.
- Copy the exercise specifications from your browser and paste them as SQL comments in your new .sql file. Add, commit, and push the problem specification in the .sql file.
- In your browser on HackerRank, test your code. Once your code works, copy it over to your local file.
- Add, commit, and push your work to GitHub.
- Lather, rinse repeat.
- If you hit any roadblocks or the problems get WAY too hard, it's time to move on to a new problem set. This means you get to make a new GitHub repository, too!

Other Resources

- If you are a Bexar county resident, get your digital library card for Bexar County Bibliotech and you'll get access to all of Lynda and TeamTreehouse. Lynda has some very solid tutorial courses for data visualization, analysis, ML, and other DS and big data topics.
- Kaggle.com has multiple tutorials for different DS topics

How to Read a Technical Book

- Identify a technical book that is not a piece of reference material.
- Make a repository for your notes and take copious notes. Commit and push them.
- When a book introduces a technique on a dataset, work through it yourself before checking any answers
- When a book introduces a technique, try that technique out on another dataset that's not in the book
- If the book gives you exercises, work through them, then commit and push your work to GitHub.
- When the book gives exercises, find ways to make up your own exercises that are similar, and commit and push.

Recommended Reading Selections

- The Data Science Handbook by Jake VanderPlas is a great review of what we covered in the Codeup DS Curriculum.
- Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow 2nd edition is

strongly recommended. The first half of the book matches what you learned in the Codeup DS course, and this is a *very* strong review and resource for extra depth. The second half of the book goes deeply into deep learning and neural networks with Keras and TensorFlow. If you only have time to work through one book, this is THE ONE.
- Practical Statistics for Data Scientists 2nd edition
- Deep Learning with Python by François Chollet is all about using Keras to build neural networks. The publisher provides the first few chapters for free on their site.

Mathy Video Series or Podcasts

- 3blue1brown on Youtube goes deep on linear algebra, statistics, and other math topics
- Data Skeptic podcast
- JoyOfMathematics on Youtube
- The O'Reilly Data Show Podcast

Guidance

- Recommend active learning activities (projects, exercises, HackerRank) vs. passive activities. There's a place for podcasts and reading, they're good, but they're not as active as going through the DS Pipeline to produce insights.
- Recommend performing new analysis on new datasets is 20x more effective than working through the curriculum exercises again.
- Avoid spending too long "shopping for the perfect dataset". It does not exist. Find something interesting, form some hypotheses, clean it up, and get after the exploration and modeling!
- Remember that the perfect is the enemy of the done.
- If it’s worth doing, it’s worth getting started.
- If you ever need motivation, here are 4 magic words that will help