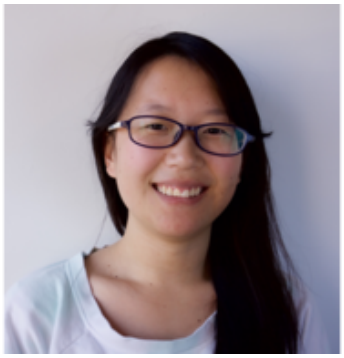
Springboard

Welcome to the Data Science Intensive Course!



Hi!

My name is Kane Li, and I'm your Student Advisor!

I'm a born and raised Los Angeles native. I recently graduated from UC Riverside with a degree in psychology, and I'm really passionate about mental health and education. Like many of us on the Springboard team, I'm also a strong believer in lifelong learning and always striving to improve yourself. My hobbies include photography, travel, and exploring new places!

As your Student Advisor, my goal is to help you succeed and support you through the workshop and beyond. So, while you'll get emails from me about weekly check ins, your weekly calls, and more, I can also help you in a variety of ways.

For example, I can:

✓ **Help you prepare for the course.** I'm happy to sit down with you to understand what kind of learner you are, what your weekly schedule might look like, what you need to do to stay on track, and more!

✓ **Check in with you!** Whether it's by email or phone, I'm happy to check in with you to see how you're doing throughout the workshop. We can talk about what frequency and medium might help you the most in our first advising call together.

✓ **Answer general questions.** If you have questions about your account, the workshop, or other general topics, I'm happy to answer them via email or schedule a call with you! I'm not a Data Scientist myself so if you have technical questions regarding the curriculum material, you can ask those questions to your mentor or in the online community!

I'm always here to chat with you, whether it's about the workshop or just to say hello. My (virtual) door is always open for you, and you can always reach me at kane@springboard.com.

In this packet, I have a few tips to share with you as well as the course timeline to help you complete!

Tips for Springboard Success!

To help set you up for success, my team and I have complied a list of ten tips we've learned from our students through advising:

1. **Set aside 'study time' and treat it as a non-negotiable commitment**. Find time in your schedule to work on the course, and treat them as you would a business meeting, interview, or in-person class: your coursework is a priority!

2. **Find an accountability buddy.** This could be a family member, co-worker, friend, or someone else in your life. Check in with your buddy each week and share your goals for the course.

3. **Understand how you're currently using your time.** Keep an activity log to track how you spend your time each day. As soon as you know where you're spending your time, you can free up spots that you would normally spend doing something else, like getting sucked into the black hole of the Internet.

4. **Minimize interruptions when possible.** Reflect on common interruptions you experience, and which ones can be reduced or removed completely? For example, when working on the curriculum, turn off your phone. You won't have the temptation to check it when the screen lights up.

5. **Overestimate how much time it will take**. By nature, humans aren't great at estimating how long it takes to complete a task. If you think it will take 1 hour, plan for 1.5 hours. That way, if you get done early, it's an added bonus. Use the estimates in the curriculum, but keep in mind that these may vary depending on your experience and learning style.

6. **Try the Pomodoro Technique.** This is one of our favorite tools for improving time estimation, focus, and productivity. A Pomodoro is a 25-minute immersive working period. After one Pomodoro, take a quick break (grab a drink, go to the bathroom), and then, complete another Pomodoro. After four Pomodoros, take a longer break.

7. **Send your mentor an agenda 24 hours before your call.** Draft a weekly agenda with action items that you'd like to cover during your call and share your agenda with your mentor the day before your call

8. **Engage in the online community.** Start conversations online or search the community for members in your area to meet up in person! If you have a question

or want feedback on a project, post it in the online community. Students, mentors, and our community manager are there to help!

9. **Attend Office Hours.** Join our weekly mentor-hosted Office Hours to humanize this online learning experience. Chat about curriculum topics or the industry in general. If you can't attend, check out the recordings, and email your student advisor to request topics for special sessions.

10. **Schedule calls with your student advisor.** Want to check in about your progress each week? Eager to provide feedback on the curriculum or learning experience? Schedule a call with your student advisor! We want to hear from you, and your voice matters to us.

Springboard

Course Pace Timeline

To help you complete in time, here is a snapshot of what your weekly goals should be. There is a more in-depth timeline in the next few pages.

Week – by – Week Schedule

Week	Unit Name
1	Introduction Programming Bootup
2	*(Start)* Data Wrangling
3	*(Finish)* Data Wrangling (*Start)* Data Story
4	(*Finish)* *Data Story* (Start) Inferential Statistics
5	(*Continue)* Inferential Statistics (Start) Machine Learning
6	(*Finish)* Inferential Statistics Capstone Milestone Report (Finish) Machine Learning
7	(Start) Machine Learning
8	(Continue) Machine Learning
9	(Finish) Machine Learning
10-12	Capstone Project

As you can see, you'll hit the ground running if you want to complete in three months. This means you should:

- ✓ **Be ready to dedicate 10 – 17 hours per week to the course.** Depending on your strengths and weaknesses, some weeks may take you longer or shorter than our own estimations!
- ✓ **Be driven and disciplined with managing your study schedule.** There is a lot to cover so make sure you stick to your study schedule.
- ✓

Remember, to complete the course, you must:

1) Complete at least 60% of the Curriculum,
2) Submit all projects, including your mini-projects and capstone project, and
3) Be approved by your mentor for completion

Now, let's look at the in-depth weekly schedule!

Week 1 (10 – 17 Hours)

1 Introduction	(hh:mm)
How to Join Your Weekly Calls	0:05
Prepare for your 1st Mentor Call	0:05
(Optional) Choose Your Course Pace	
1.1 Demystifying Data Science	
Watch "What is Data Science?" by Mike Gualteri	0:10
What is Data Science?	0:30
1.2 Start Thinking about your Capstone Project	
Download and Read through the Capstone Project Guidelines	0:30
Submit 3 Potential Capstone Project Ideas	1:00
2 Programming Bootup	
Get Anaconda	0:10
Python, Of Course!	0:30
4 Python Built-in Help Functions You Should Know	0:10
(Optional) Brush Up Your Python with Datacamp	
2.1 Jupyter Notebook	
Get Started with Jupyter Notebook	0:20
How to Run Code in Jupyter Notebook	0:10
A Video Walkthrough on How to Use the Jupyter Notebook	0:20
(Optional) Additional Resources	
2.2 Matplotlib	
Basic Plotting, Default Settings, and formatting	2:00
Practice Commonly Used Plot Types	0:30
A Quick Tutorial on Seaborn	0:30
2.3 Git and Github	
Start Your Github Profile	2:00
Submit a Link to Your Github Profile	0:05
(Optional) Additional Programming Resources	

Week 2 (12 – 13 Hours)

3 Data Wrangling	
Pandas – Quick Intro	0:30
3.1 Pandas Deep Dive	
Download Source Files	0:15
Watch the video and code along	4:00 – 5:00
3.2 Data Cleaning with Pandas	
Other People's Messy Data	0:30
Working with Missing Data	0:30
3.3 Working with Data in Files	
Practice Working with Different File Formats	0:30
Work on JSON-Based Data Exercises and Submit on your Github	1:30

Week 3 (16 – 17 Hours)

3.4 Working with Data in Databases	
Learn SQL with Mode Analytics	6:00
Analytics Training with Mode Analytics	4:00
Overview of NoSQL Databases	0:30
(Optional) Additional Resources for Data Wrangling	
3.5 Capstone Project Proposal	
Submit Your Capstone Project Proposal	1:00
4 Data Story	
4.1 Core Resources for Data Story	
Exploratory Data Analysis	1:30 – 2:00
Storytelling and Effective Communication	1:30 – 2:00
Effective Presentations	1:30 – 2:00

Week 4 (11 – 16 Hours)

4 Data Story (contd)	(hh:mm)
4.2 Apply Data Storytelling	
Work on your Data Story	5:00 – 10:00
5 Inferential Statistics	
5.1 Basic Statistical Inference	
Statistical Inference with Computational Methods - Allen Downey	4:00 – 6:00

Week 5 (14 – 15 Hours)

5.2 A Deeper Dive into Hypothesis Testing with Khan Academy	
One Sample Confidence Intervals (Khan Academy)	2:00
One Sample Significance Tests (Khan Academy)	3:00
Significance Tests and Confidence Intervals (Khan Academy)	3:00
Inference for Categorical Data (Khan Academy)	2:00
5.3 Exploratory Data Analysis Projects	
EDA: Human Body Temperature	1:30
EDA: Examine Racial Discrimination	1:00
EDA: Reduce Hospital Readmissions	2:00

Week 6 (7 – 12 Hours)

5.4 Regression and Correlation	
Describing Relationships in Quantitative Data (Khan Academy)	2:00
5.5 A/B Testing	
Introduction to A/B Testing	0:05
A/B Testing with Websites	0:10
(Optional) Additional Resources	
6 Capstone Milestone Report	
Submit Your Capstone Milestone Report	5:00 - 10:00

Week 7 (13 – 14 Hours)

7 Machine Learning	*(hh:mm)*
7.1 Linear and Logistic Regression	
Bias and Regression	2:00 – 3:00
Regression (Contd)	2:00 – 3:00
Classification, kNN, Cross-Validation, Dimensionality Reduction	2:00 – 3:00
Linear Regression using Boston Housing Data Set	2:00 – 3:00
Heights and Weights using Logistic Regression	1:00 – 2:00

Week 8 (13 – 14 Hours)

7.2 SVM and Trees	
SVM and Evaluation	2:00 – 3:00
Decision Trees and Random Forests	2:00 – 3:00
(Optional) Ensemble Methods	
7.3 Bayesian Methods and Text Data	
Bayes Theorem and Bayesian Methods	2:00 – 3:00
(Optional) Sentiment Classification using Scikit-learn	1:00 – 2:00
Predicting Movie Ratings from Reviews using Naive Bayes	1:00 – 2:00

Week 9 (8 – 9 Hours)

7.4 Best Practices	
Best Practices in Supervised Learning	2:00 – 3:00
7.5 Introduction to Clustering	
Clustering	2:00 – 3:00
Tutorial: Clustering with Scikit-Learn	1:30
Clustering: Customer Segmentation	1:00 – 2:00

Week 10 – 12 (20 – 30 Hours)

8 Capstone Project	*(hh:mm)*
Complete & Submit Capstone Project	20:00 – 30:00