

# **CATALOG**

January 1, 2021 – December 31, 2021

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### **MISSION**

Springboard's mission is to enable every individual to access high-quality education and acquire the skills needed to advance their careers.

We believe that the new economy needs a different approach to education. Education is no longer a one-time investment at the beginning of one's career; it's a lifelong pursuit. We provide online content, industry-driven mentorship, and career support in an effective way to enable people to learn new skills and further their careers.

### **OBJECTIVES**

In order to fulfill its mission, Springboard is committed to the following objectives for its educational and training programs:

Deliver high-quality content that helps students gain the practical skills needed to succeed in their careers.

Provide a strong mentorship community for students to gain more insight into industry, further sharpen their skills, and build a stronger professional network.

Cultivate an innovative environment where mentors and instructors can combine content development with human support and utilize technology to more effectively deliver an effective educational experience.

### **GENERAL INFORMATION**

### **FACILITY AND EQUIPMENT**

Springboard is located at 22 Battery Street, Floor 11, San Francisco, CA 94111. All programs are offered in a distance education format. Coursework is completed at a location determined by the student.

Springboard's office is approximately 9,300 square feet that includes a reception area, training room and offices. Equipment within the office includes office furniture, printer, laptops, monitors, TV screens.

### **ADMINISTRATION DAYS / HOURS**

8 am to 5 pm Monday – Friday Pacific Standard Time.

### **HOLIDAYS**

Springboard observes the following holidays:

- New Year's Day
- Memorial Day
- Labor Day

- Independence Day
- Thanksgiving Day and the day after
- Christmas vacation (last week of the year)

### **APPROVAL**

Springboard is a private institution approved to operate by the California Bureau for Private Postsecondary Education. Approval to operate means the institution is compliant with the minimum standards contained in the California Private Postsecondary Education Act of 2009 (as amended) and Division 7.5 of Title 5 of the California Code of Regulations.

### ADMISSIONS POLICY AND PROCEDURE

### **POLICY**

#### General:

All prospective students must:

- Have a high school diploma or equivalent. Springboard will accept as a recognized
  equivalent of secondary education a GED, passing score on the California High School
  Proficiency Exam, a DD214 that indicates high school equivalency, a degree issued to the
  student that indicates high school graduation and date, or documentation of completion of
  a bachelor's degree;
- Be fluent in English;
- Fill out a short application form and a technical skills survey as part of the admissions process;
- Be provided a catalog;
- Be provided the School Performance Fact Sheet;
- Document aptitude for a distance education program via a questionnaire:
- Document on the enrollment agreement at a minimum the following equipment required to participate in a distance education program:
  - o Computer
  - o Internet Connection and Browser
  - o Skype

## Program Specific:

Program	Admissions Prerequisites
Data Science Career Track	This data science bootcamp was designed for people with prior experience in statistics and programming, such as software developers, analysts, and finance professionals. All professional and academic backgrounds are welcome.
	Prerequisites:  • 6 months of active coding experience with a general-purpose programming language (e.g., Python, R, Java, C++)

	Comfortable with basic probability and descriptive statistics, including concepts like mean and median, standard deviation, distributions, and histograms
Data Science Career Track Plus	This data science bootcamp is similar to our Data Science Career Track, with additional mentor support and live classes.
Data Analytics Career Track	Prerequisites:  • 6 months of active coding experience with a general-purpose programming language (e.g., Python, R, Java, C++)  • Comfortable with basic probability and descriptive statistics, including concepts like mean and median, standard deviation, distributions, and histograms  This data analytics bootcamp is designed for people who demonstrate an aptitude towards critical thinking and problem solving and have two years
	of work experience.
	<ul> <li>Prerequisites:</li> <li>Strong critical thinking and problem-solving skills</li> <li>2 years of professional work experience working regularly with office, design or programming tools</li> <li>Fluency in English (written and spoken), as determined by initial interactions with the Springboard Admissions team.</li> </ul>
Data Engineering Career Track	This data engineering bootcamp was designed for students with some experience in a data analyst, data science, or software engineering role.
	<ul> <li>Prerequisites (any of the following are sufficient):</li> <li>6+ months of work experience in any analytical role, ideally working with SQL</li> <li>6+ months of work experience as a software engineer using Python or Java or C++</li> <li>Bachelor's degree in CS or other degree that involves extensive programming skills</li> </ul>
ML Engineering Career Track	This ML Engineering bootcamp is designed for people with strong software engineering skills and industry experience, who want to become Machine Learning Engineers.
	Prerequisites (any of the following are sufficient):  • 1+ year of professional experience working in software engineering and development OR data science using a general-purpose OOP language such as Python, Java, and C++  • a Master's or Ph.D. degree in CS, Math, EE, Physics, Data Science, Informatics, Economics, Operations Research, Financial Engineering, Applied Stats or other degree that involves extensive programming experience

UX Career Track	This UX bootcamp is for people who demonstrate an aptitude toward problem solving, have strong communication and collaboration skills, and have a background in adjacent fields.
	Proroquiaitos:
	Prerequisites:  • Aptitude toward problem-solving, communication, and collaboration skills
	At least 1 year of documented professional experience or a degree in one of the following areas: understanding users, producing/managing visual content, or developing digital products. For example: user research, HCI, human factors; graphic/industrial design, architecture, studio arts; UI design
UI/UX Design	The two-step admissions process screens for candidates who demonstrate
Career Track	strong visual, creativity, and communication skills (which are critical on a cross-functional design team).
	Duran mairitana
	Prerequisites:
	<ul> <li>All backgrounds are welcome as long as you can demonstrate strong visual, creativity, and communication skills</li> </ul>
	<ul> <li>Passing an evaluation of baseline visual skills, analytical thinking</li> </ul>
	and the ability to empathize with users
Software	This software engineering bootcamp is designed for motivated people
Engineering	who have basic skills in JavaScript, an aptitude for problem solving, and
Career Track	strong communication and collaboration skills. We welcome students from all work experiences and fields of study.
	Proroquisitos
	<ul> <li>Prerequisites:</li> <li>JavaScript fundamentals - Ability to write simple functions, loops, conditional statements and declare variables</li> <li>Programmatic problem solving skills - Ability to break down a problem into its component pieces, think through it logically, and</li> </ul>
	come up with a solution
	<ul> <li>Recommended: HTML &amp; CSS fundamentals - Ability to build simple web pages with basic knowledge of selectors, common CSS rules and specificity</li> </ul>
Cyber Security	This cybersecurity bootcamp is designed for people who have an appetite
Career Track	to try new things, an aptitude for problem-solving, and strong communication and collaboration skills.
	Prerequisites:
	<ul> <li>All backgrounds are welcome, as long as you can demonstrate strong analytical skills and a determination to work through and complete all required course activities</li> </ul>
	<ul> <li>Passing an evaluation of baseline soft-skills, centered around communication skills, motivation, professionalism, a commitment to learning and an analytical mindset</li> </ul>

Intro to Design	This course is for people who are interested in UI/UX, but are not ready to make the full leap to switch careers.  All professional and educational backgrounds are welcome.
Data Science Career Track Prep	This data science bootcamp is designed for students who want an introduction to foundational data skills in Python and statistics, as well as introductory data science concepts. The curriculum is specifically designed to help you pass the Data Science Career Track admissions technical survey.  Prerequisites:  • All professional and educational backgrounds are welcome; no coding experience required.  • Recommended proficiency in high-school level mathematics
Software Engineering Career Track Prep	This program is designed for students who want an introduction to foundational coding skills. The curriculum is specifically designed to help you pass the Software Engineering Career Track admissions technical survey.  All professional and educational backgrounds are welcome.

### **PROCEDURE**

Admissions procedures include meeting with a Springboard representative to review goals, program details and prerequisites, as applicable, school policies and procedures, the School Performance Fact Sheet, catalog, and graduation requirements. Each prospective student must:

- Provide documentation of a high school diploma or equivalent;
- Review the catalog;
- Initial and sign the School Performance Fact Sheet;
- Complete a distance education questionnaire;
- Interview with an Admissions Director;
- Provide documentation as requested to demonstrate meeting program specific prerequisites, as applicable; and
- Complete the enrollment agreement.

### INTERNATIONAL STUDENTS AND ENGLISH LANGUAGE SERVICES

Springboard does not offer visa services to prospective students from other countries or English language services. Springboard does not offer English as a Second Language instruction. All instruction occurs in English. English language proficiency is documented by:

- 1. the admissions process; and
- 2. Springboard's receipt of prior education documentation as stated in the admissions policy.

### **ABILITY-TO-BENEFIT**

Springboard does not admit ability-to-benefit students.

### TRANSFER OF CREDIT

Springboard does not evaluate or award transfer credit from units earned at other institutions.

Springboard does not accept hours or credit through transfer of credit challenge examinations, achievement tests, or experiential learning.

# NOTICE CONCERNING TRANSFERABILITY OF CREDITS AND CREDENTIALS EARNED AT OUR INSTITUTION

The transferability of credits you earn at Springboard is at the complete discretion of an institution to which you may seek to transfer. Acceptance of the certificate you earn in the educational program is also at the complete discretion of the institution to which you may seek to transfer. If the certificate that you earn at this institution is not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason, you should make certain that your attendance at this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending Springboard to determine if your certificate will transfer.

### **ARTICULATION AGREEMENTS**

Springboard has not entered into any transfer or articulation agreements with any other college or university.

### **PROGRAMS**

### **Data Analytics Career Track**

**Program Length:** 354 Hours

Cumulative Final Exam: Cumulative Capstone Project Graduation Document: Certificate of Completion

Standard Occupational Code / Potential Employment Titles: 15-2051.01 - Business

**Intelligence Analysts** 

**Sample of reported job titles:** Business Intelligence Analyst, Competitive Intelligence Analyst, Data Analyst, Intelligence Analyst, Market Intelligence Analyst, Market Intelligence Consultant,

Strategic Business and Technology Intelligence Consultant, Strategist

## **Program Description / Objectives:**

In addition to small projects designed to reinforce specific concepts, you'll complete two capstone projects focused on a realistic data analytics scenario that you can show to future employers.

While working on the projects, you'll:

- Choose an industry dataset
- Conduct end-to-end analysis
- Synthesize insights in slide deck format
- Present your findings

Subject Title	Subject Description
Framing Structured Thinking	<ul> <li>All data analysis starts with a question. But how does one ask the right question? In this unit, you'll learn to think in a structured manner and break down problems into bite-sized chunks, which can be tested. This will guide your analysis and prevent you from analyzing data for the sake of analysis.</li> <li>Structured thinking through case studies and problem statement worksheets</li> <li>Problem Solving Framework and Processes such as the HDEIP Framework</li> </ul>
	• Issue Trees, Hypotheses Trees, and Value Driver Trees
Analyzing Business Problems	<ul> <li>A key skill analysts should have is the ability to structure their efforts around a central theme and present it to an executive with tangible business insight. In this unit, you'll be introduced to common financial concepts as well as the basics of economics.</li> <li>Using Excel to create a default financial analysis module covering revenue and operational cost modelling.</li> <li>Financial concepts including revenue, cost of goods sold, profit, balance sheets, cash flow statements, income statements and EBIT</li> <li>Economic concepts including supply and demand curves, cost curves</li> <li>Statistical concepts including descriptive statistics (mean, mode, standard deviation, correlations etc.), correlations, simple and multivariate regression, confidence intervals</li> </ul>

Connecting	Vou've have asked to engly an extensive set of data so you can ensure the
_	You've been asked to analyze an extensive set of data so you can answer the
Data Using	burning question your executive has. In this unit, you'll develop a high-level
SQL	understanding of what databases are, learn about the databases that you can
	use in your work, and learn how to communicate with databases.
	Introduction to SQL, best practices in writing queries (including)
	common table expressions) and common DA/BA tools
	Introduction to structured and unstructured Databases
	Introduction to set theory
	Case studies and hands-on exercises in writing SQL with real data
	Advanced supplementary material (i.e. Mode SQL)
Visualizing	Coding skills, especially the ability to do data analysis in Python, are an
Data with	additional skill set which will set you apart from your peers in the job
Python	market. In this unit, you'll learn the basics of Python and key Python
	libraries, including pandas, numpy, matplotlib, seaborn, and more. You will
	learn how to import and wrangle data, as well as visualize it.
	Basic Python syntax
	Introduction to Jupyter and Jupyter Notebooks
	Data cleaning
	Visualizing data and trends with Seaborn and Matplotlib
	Practical exercises in Python with real data to extract insights that could
	be presented to an executive audience
Communicating	Data analysts also need to be adept at presenting the results of their analysis
Your Analysis	to the appropriate stakeholders. This is a key, high-demand skill that
	separates effective business-oriented data analysts from the rest. This unit
	covers best practices for presenting to both technical and non-technical
	audiences, ranging from front-line employees to executives.
	Visualization tools such as Tableau and PowerBi
	Creating presentations with Powerpoints etc.
	Effective communication strategies, formats, and templates
	Presentations to technical and non-technical stakeholders, and C-suite
	executives through case studies
	Presentation practice across different forms

### **Data Science Career Track**

**Program Length:** 500 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

**Standard Occupational Codes / Potential Employment Titles**: 15-2051.00 - Data Scientists **Sample of reported job titles**: O'NET Online title of Data Scientists represents an occupation

for which data collection is currently underway.

### **Program Description / Objectives:**

Each subject will cover a key aspect of Data Science and have a combination of materials: lectures, theory, coding exercises, reading/viewing exercises, and career related coursework.

In addition to small projects designed to reinforce specific technical concepts, you'll complete three capstone projects focused on realistic data science scenarios that you can show to future employers.

While working on the projects, you'll:

- Identify a client's business problem
- Acquire, wrangle, and explore relevant data
- Use machine learning to make predictions
- Create real-world business impact through data storytelling

Subject Title	Subject Description
The Data	The course centers around the Data Science Method. This method involves
Science	six steps:
Method	<ol> <li>Problem Identification - this step involves identifying the correct problem to solve and setting goals for your project. You'll learn how to create a SMART problem statement and form hypotheses about the problem.</li> <li>Data Wrangling - this step involves the collection, organization, and definition of a dataset or datasets. You'll learn how to compile data, build local file structures, create data profiles, resolve formatting issues, and more.</li> <li>Exploratory Data Analysis - this step involves creating plots and charts to understand the relationship between data and the features of that data. You'll learn how to create data visualizations in Python and use statistics to identify patterns.</li> <li>Pre-processing and Training Data Development - this step involves standardizing and training your dataset. You'll learn how to remove out-of-value ranges and create testing and training subsets of your data.</li> <li>Modeling - this involves selecting, training and deploying a model to</li> </ol>
	data.

	6. Documentation - this involves documenting the work you've done and sharing your findings. You'll learn how to create a project report and present your findings.
The Python Data Science Stack	Python has become a lingua franca of data science. In this unit, you'll learn to program in Python, how to follow best coding practices, and start using an ecosystem of powerful Python-based tools.  • Python data types, foundations, and standard libraries  • Pandas  • Visualization tools in Python like matplotlib and Seaborn
SQL and Databases	In this section of the course, you'll learn how to leverage Structured Query Language (SQL) to query relational database management systems. In other words, you'll use queries to understand the data contained in databases.  Topics covered:
	<ul> <li>The landscape of SQL and databases</li> <li>Writing queries in SQL</li> <li>Working with relational databases in Python</li> </ul>
Data Storytelling	If there's one thing that most data scientists would have loved to know before they entered the field, it's that data science is not just about the math, the algorithms and the analysis, it's also about telling a good story. In real life, data scientists don't work in a vacuum - there's always a client, internal or external, waiting on the results of their work.
	A data story is a powerful way to present insights to your clients, combining visualizations and text into a narrative. But storytelling is an art, and needs creativity. This section will try to get your creative juices flowing by suggesting some interesting questions you can ask of your dataset, and will cover a few plotting techniques you can use to reveal insights
Statistical Inference	Statistics is the mathematical foundation of data science. Within statistics, inferential statistics is a set of techniques that helps us identify significant trends and characteristics of a data set. Not only is it useful to explore the data and tell a good story, it also paves the way for deeper analysis and actual predictive modeling. In this module, we cover several important inferential statistics techniques in detail.
	Topics covered:
	<ul> <li>Theory of inferential statistics</li> <li>Statistical significance</li> <li>Parameter estimation</li> <li>Hypothesis testing</li> <li>Correlation and regression</li> <li>Exploratory data analysis</li> </ul>

# Machine Machine learning combines aspects of computer science and statistics to Learning extract useful insights and predictions from data. Machine learning is what lets us make useful predictions and recommendations, or automatically find groups and categories in complex data sets. In this section of the course, you'll learn and use the major supervised and unsupervised machine learning algorithms. You'll learn when to use these algorithms, the assumptions they incorporate, the tradeoffs they involve, and the various metrics you can use to evaluate how well your algorithm performs. Topics covered: • The landscape of machine learning Supervised learning and the most popular algorithms, including linear and logistic regression, support vector machines, decision trees, clustering, time series and forecasting, ensemble learning with random forests and gradient boosting • Unsupervised learning and the most commonly used clustering techniques, including k-means clustering, agglomerative hierarchical clustering, Euclidean & Manhattan distances, cosine similarity, and principal components analysis Machine learning model evaluation and optimization Career You'll receive career material at strategic points both in the curriculum as well as via calls with our career support coaches. We'll help you create a Resources tailored job search strategy based on your background and goals, teach you how to evaluate companies and roles, show you how to effectively get and ace interviews, and explain how to negotiate an above-market salary. Hone your skills in a specific area of expertise by choosing one of our three Specialization Track specialization track options. Option 1: The Generalist Track This track will prepare you to take on versatile data science roles across a wide variety of business domains and geographical locations. You'll build on the foundational skills you learned in the core units and tackle more advanced topics like working with Big Data and software engineering best practices. Option 2: The Business Insider Track The goal of this track is to teach you advanced data visualization and business analytics skills to extract actionable business insights. While you will have the ability to build predictive machine learning models, you'll primarily focus on learning how to identify insights and effectively

communicate recommendations.

Option 3: The Advanced Machine Learning Track

The goal of this track is to teach you advanced machine learning skills and
concepts, including deep learning and the deployment of machine learning
models on standard industry platforms. If you want to broaden your machine
learning skills, this track may be the right one for you.

#### **Data Science Career Track Plus**

**Program Length:** 500 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

**Standard Occupational Codes / Potential Employment Titles**: 15-2051.00 - Data Scientists **Sample of reported job titles:** O'NET Online title of Data Scientists represents an occupation

for which data collection is currently underway.

# **Program Description / Objectives:**

Each subject will cover a key aspect of Data Science and have a combination of materials: lectures, theory, coding exercises, reading/viewing exercises, and career related coursework.

In addition to coursework, you'll have access to double the weekly mentorship time, on demand access to TAs, and a personalized study plan that you develop with your student advisor. You will also have a 2-hour session every other Saturday to join peers in your cohort in our live virtual classroom. Led by a data scientist instructor, you'll dig deeper on challenging topics in the curriculum and engage in interactive exercises. These features are only available to our Plus students.

In addition to small projects designed to reinforce specific technical concepts, you'll complete three capstone projects focused on realistic data science scenarios that you can show to future employers.

While working on the projects, you'll:

- Identify a client's business problem
- Acquire, wrangle, and explore relevant data
- Use machine learning to make predictions
- Create real-world business impact through data storytelling

<b>Subject Title</b>	Subject Description
The Data	The course centers around the Data Science Method. This method involves
Science	six steps:
Method	1. Problem Identification - this step involves identifying the correct
	problem to solve and setting goals for your project. You'll learn how

	to create a SMART problem statement and form hypotheses about the problem.  2. Data Wrangling - this step involves the collection, organization, and definition of a dataset or datasets. You'll learn how to compile data, build local file structures, create data profiles, resolve formatting issues, and more.  3. Exploratory Data Analysis - this step involves creating plots and charts to understand the relationship between data and the features of that data. You'll learn how to create data visualizations in Python and use statistics to identify patterns.  4. Pre-processing and Training Data Development - this step involves standardizing and training your dataset. You'll learn how to remove out-of-value ranges and create testing and training subsets of your data.  5. Modeling - this involves selecting, training and deploying a model to
	make predictive insights. You'll learn industry-standard algorithms to build models.  6. Documentation - this involves documenting the work you've done
	and sharing your findings. You'll learn how to create a project report and present your findings.
The Python Data Science Stack	Python has become a lingua franca of data science. In this unit, you'll learn to program in Python, how to follow best coding practices, and start using an ecosystem of powerful Python-based tools.  • Python data types, foundations, and standard libraries  • Pandas
	<ul> <li>Visualization tools in Python like matplotlib and Seaborn</li> </ul>
SQL and Databases	In this section of the course, you'll learn how to leverage Structured Query Language (SQL) to query relational database management systems. In other words, you'll use queries to understand the data contained in databases.  Topics covered:
	<ul> <li>The landscape of SQL and databases</li> <li>Writing queries in SQL</li> <li>Working with relational databases in Python</li> </ul>
Data Storytelling	If there's one thing that most data scientists would have loved to know before they entered the field, it's that data science is not just about the math, the algorithms and the analysis, it's also about telling a good story. In real life, data scientists don't work in a vacuum - there's always a client, internal or external, waiting on the results of their work.
	A data story is a powerful way to present insights to your clients, combining visualizations and text into a narrative. But storytelling is an art, and needs creativity. This section will try to get your creative juices flowing by suggesting some interesting questions you can ask of your dataset, and will cover a few plotting techniques you can use to reveal insights

# Statistics is the mathematical foundation of data science. Within statistics, Statistical Inference inferential statistics is a set of techniques that helps us identify significant trends and characteristics of a data set. Not only is it useful to explore the data and tell a good story, it also paves the way for deeper analysis and actual predictive modeling. In this module, we cover several important inferential statistics techniques in detail. Topics covered: • Theory of inferential statistics • Statistical significance • Parameter estimation Hypothesis testing • Correlation and regression • Exploratory data analysis Machine learning combines aspects of computer science and statistics to Machine Learning extract useful insights and predictions from data. Machine learning is what lets us make useful predictions and recommendations, or automatically find groups and categories in complex data sets. In this section of the course, you'll learn and use the major supervised and unsupervised machine learning algorithms. You'll learn when to use these algorithms, the assumptions they incorporate, the tradeoffs they involve, and the various metrics you can use to evaluate how well your algorithm performs. Topics covered: • The landscape of machine learning Supervised learning and the most popular algorithms, including linear and logistic regression, support vector machines, decision trees, clustering, time series and forecasting, ensemble learning with random forests and gradient boosting Unsupervised learning and the most commonly used clustering techniques, including k-means clustering, agglomerative hierarchical clustering, Euclidean & Manhattan distances, cosine similarity, and principal components analysis Machine learning model evaluation and optimization Career You'll receive career material at strategic points both in the curriculum as well as via calls with our career support coaches. We'll help you create a Resources tailored job search strategy based on your background and goals, teach you how to evaluate companies and roles, show you how to effectively get and ace interviews, and explain how to negotiate an above-market salary. Hone your skills in a specific area of expertise by choosing one of our three Specialization Track specialization track options.

# Option 1: The Generalist Track

This track will prepare you to take on versatile data science roles across a wide variety of business domains and geographical locations. You'll build on the foundational skills you learned in the core units and tackle more advanced topics like working with Big Data and software engineering best practices.

### Option 2: The Business Insider Track

The goal of this track is to teach you advanced data visualization and business analytics skills to extract actionable business insights. While you will have the ability to build predictive machine learning models, you'll primarily focus on learning how to identify insights and effectively communicate recommendations.

### Option 3: The Advanced Machine Learning Track

The goal of this track is to teach you advanced machine learning skills and concepts, including deep learning and the deployment of machine learning models on standard industry platforms. If you want to broaden your machine learning skills, this track may be the right one for you.

# **Data Engineering Career Track**

**Program Length:** 450 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

**Standard Occupational Codes / Potential Employment Titles**: 15-2051.00 - Data Scientists **Sample of reported job titles:** O'NET Online title of Data Scientists represents an occupation

for which data collection is currently underway.

### **Program Description / Objectives:**

In addition to small projects designed to reinforce specific concepts, you'll complete two capstone projects focused on a realistic data engineering scenario that you can show to future employers.

Subject Title	Subject Description
Big Data Engineering	In this module, you will learn Big Data using the Hadoop Ecosystem. Why Hadoop? It is one of the most sought after data skills in the tech industry. You will also be learning the hottest technology in big data: Apache Spark. Employers including Amazon, EBay, NASA JPL, and Yahoo use Spark to quickly extract meaning from massive data sets across fault-tolerant Hadoop clusters.
	Topics Covered:  • Learn how to use one of the most popular softwares in Big Data right now, using batch processing and real-time processing

	Translate complex analysis problems into iterative or multi-stage Spark scripts
	Use Spark programming to explore and transform massive datasets at scale by writing high performing programs
Data Engineering in the Cloud	In this module, you will gain one of the most in-demand market skills - Cloud Data Engineering. This module introduces you to the fundamentals of cloud computing and then takes you on an hands-on journey of designing data intensive applications using various cloud components.
	<ul> <li>Topics Covered:</li> <li>Understand the core concepts of cloud computing (Compute, Networking, Security, Data security in-transit and at-rest)</li> <li>Designing highly available and scalable cloud solutions for Data Engineering using Azure (Data Factory, CosmosDB, Azure SQL DW, Azure HDInsight, Databricks)</li> </ul>
Data Pipelines and Orchestration	As a Data Engineer, designing robust data pipelines is one of your core responsibilities and in most cases, the end result of your engineering activities. In this module, you will learn an open-source platform to programmatically author, schedule, and monitor workflows - Apache Airflow. You will learn to design high performing data pipelines and make sure they run well by monitoring the underlying resources.
	<ul> <li>Topics Covered:</li> <li>Design robust data pipelines using Apache Airflow</li> <li>Monitoring the health of your data and pipeline using various tools and techniques including open source monitoring tools, custom dashboards, and Cloud pipeline monitoring</li> </ul>
Data Virtualization and Container-based Applications	You will learn how to use Docker, a widely used platform that developers and administrators use to build, ship, and run distributed applications. Docker allows you to create containers that run both the application and all of its dependencies in a self-contained way on your operating system, requiring minimal disk space compared to a virtual machine. Docker containers are highly portable and allow you to run the same application on a personal computer or the cloud, and you can simultaneously run multiple instances of the same container.
	You will also learn about Kubernetes, a production-grade system for managing complex applications with many different running containers. Kubernetes goes hand in hand with Docker and will allow you to manage the full lifecycle of containerized applications across multiple machines.
	<ul> <li>Topics Covered:</li> <li>Convert your applications and data processing pipelines to container based applications</li> <li>Develop your own Docker images using Dockerfiles and practice Docker Compose</li> </ul>

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	Orchestrate containers to deliver scalable and reliable performance using Kubernetes
Streaming Data and APIs	In this module, you will learn how to use Apache Kafka - which is used in production by over 33% of the Fortune 500 companies such as Netflix, Airbnb, Uber, Walmart and LinkedIn.
	It is the leading distributed data streaming enterprise big data technology - which we will integrate with tools that we have learned previously to make use of streaming data in your data pipelines. We also learn to design and test APIs in order to exchange data between applications.
	Topics Covered:  Design pipelines to process Real-time Streams using Apache Kafka and
	<ul> <li>Kafka Streams API</li> <li>Design and test APIs for robust performance and security</li> <li>Learn some API best practices using real-world examples (e.g. graceful degradation, HTTP verbs, Request validation, Logging, exception handling, etc.)</li> </ul>
Interacting with Data	This section helps you build a strong foundation in data skills Data Warehousing and Data Modeling which are important in order to decide the best way to store and retrieve data.
	You will be learning in-depth SQL, which forms the cornerstone of all relational database operations. The ability to write SQL queries is essential for those who develop database applications.
	<ul> <li>Topics Covered:</li> <li>How to explore large collection of business-related historical data that would be used to make business decisions</li> <li>You'll learn how to build and organize complex queries to make them more readable with the WITH clause, and how to use set operations such as UNION, UNION ALL, EXCEPT, and INTERSECT to combine tables.</li> </ul>
Coding for Data Engineering	Algorithms are at the center of almost any programming job. In the world of data engineering, you will likely need to answer questions about efficient algorithms in any interview. We'll make sure you ace the interview, and have the programming chops needed for the job. You'll learn how to write efficient Python code, a critical skill for any data analyst, data scientist, or data engineer. You'll learn concepts such as functional programming, closures, decorators, and more. You'll gradually learn everything you need to do to write an end-to-end data pipeline with a scheduler in Python. By the time you're finished, you'll be able to describe the difference between imperative and functional programming and approach problems in both ways.

We'll give you a strong foundation for the types of programming you'll be doing as an engineer taking you through comprehensive Python, Data Structures, and Algorithms tutorials and solidifying the concepts with hands-on exercises.

# Topics Covered:

- Get you up to speed with Python by creating multiple data engineering related projects like data wrangling, web scraping, data parsing, and streaming data from sources like Twitter
- The performance difference between data structures such as hash tables, stacks, queues, and more.
- Using popular Algorithms (like Greedy techniques, Divide and Conquer, Dynamic programming, Network flow) to improve application performance
- Master essential GIT skills to develop collaboratively in team

## **ML Engineering Career Track**

**Program Length:** 500 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

**Standard Occupational Codes / Potential Employment Titles**: 15-2051.00 - Data Scientists **Sample of reported job titles:** O'NET Online title of 15-2051.00 - Data Scientists represents an

occupation for which data collection is currently underway.

### **Program Description / Objectives:**

In this course, you'll design a machine learning/deep learning system, build a prototype and deploy a running application that can be accessed via API or web service.

In addition to small projects designed to reinforce specific technical concepts, you'll build a realistic, complete, ML application that's available to use via an API, a web service or, optionally, a website.

While working on the projects, you'll:

- Collect, wrangle, and explore project-relevant data
- Build a machine learning or deep learning prototype
- Scale your prototype
- Design deployment solutions and deploy your application to production

This Machine Learning bootcamp is designed for people with strong software engineering skills and industry experience, who want to become Machine Learning Engineers.

Subject Title	Subject Description
The Machine Learning Engineering Stack	Throughout this course, you'll be introduced to a variety of tools and libraries that are used in the data science and machine learning world. These include everything from ML libraries to deployment tools. There will also be refreshers on software engineering best practices and foundational math concepts that every ML Engineer should know.  The Python Data Science Stack: Pandas, scikit-learn, Keras, TensorFlow Data engineering tools: Spark/PySpark, Luigi, Containers, AWS Software engineering tools: Continuous integration, version control with
	Git, logging, testing, and debugging  • Data structures and algorithms refresher and optimizing Python to write faster code
Data Wrangling at Scale and Statistics for AI	No matter what kind of data you're working with, collecting, cleaning up and managing that data will be a critical part of your work. In this unit, you'll learn to collect data at scale from APIs, real-time systems, and websites. You'll also learn to transform this data efficiently and effectively for ML algorithms to crunch down the pipeline.
	Collect data at scale from APIs, real-time systems, and websites.

# Transform this data efficiently and effectively so that ML algorithms can crunch it down the pipeline. Use frequentist statistical inference and hypothesis testing to draw insights from data. **Foundations** Machine Learning combines aspects of computer science and statistics to extract useful insights and predictions from data. In this unit, we'll cover the of Machine most important machine learning algorithms (supervised and unsupervised). Learning You'll learn when these algorithms are useful, the assumptions they incorporate, the tradeoffs they involve and the various metrics you can use to evaluate how well your algorithm performs. Most importantly, you'll learn to implement them at scale. Common algorithms like linear regression, logistic regression, and statistical modeling Advanced algorithms like Decision Tree, Random Forest, gradient boosting, and K-means clustering Model selection, evaluation, and interpretation concepts like regularization, the Curse of Dimensionality, and cross-validation Supervised and unsupervised learning Tools: scikit-learn, SparkML, Auto-ML systems A Deep Dive Deep learning is a set of advanced machine learning techniques that power into Deep many of today's most cutting edge applications, including image recognition, Learning machine translation, self-driving cars, speech recognition, and more. It is based on neural networks, which are loosely inspired by the structure of the human brain. In this unit, you'll establish a thorough foundation in deep learning and build real-world applications. Overview of Neural Networks, Backpropagation and foundational techniques Principles of Deep Neural Networks Common Deep Neural Network configurations e.g. RNNs, CNNs, MLPs, **LSTMs** Generative Deep Learning and GANs Engineering Frameworks: Keras, TensorFlow, PyTorch NLP uses techniques from computer science, linguistics, and machine Natural learning to process human language, typically in the form of unstructured Language text. In this unit, you'll learn the basics of text data, how to clean and process **Processing** it, and how to extract insights from text sources and conversations. We'll walk you through a detailed case study to solve a real NLP problem using Deep Learning and other techniques. How to work with text and natural language data NLP in Python, using common libraries such as NLTK and spaCy Representing language: BOW, TF-IDF, word embedding models (word2vec, GloVe, FastText, and StarSpace) Deep Learning techniques for NLP

	Chatbots and other modern NLP applications
AI Tutorial:	Image processing has taken off in the last decade due to the proliferation of
Computer	images on social media sites such as Facebook and Instagram. Recognizing
Vision	objects such as cars, and individuals from images is a hard problem, but AI
V 151011	techniques have made huge strides. In this case study, we'll go through image
	processing techniques and solve a real image processing problem. Computer
	vision and image processing concepts will be spread across two units — one
	that dives into the theory behind these concepts and another that works
	through a hands-on tutorial that will help you put into practice everything
	you've learned.
	Foundations of computer vision and image processing
	Image clustering and classification with K-means, multitask classifiers,
	and GANs
	Object detection and image segmentation with algorithms
	Applications and trends in computer vision
Deploying AI	This is the unit where the rubber meets the road. You'll take everything you
Systems to	have learned so far: the tools, techniques, and the libraries and deploy a
Production	large-scale AI system.
	Common tools and techniques to build large-scale AI applications
	Tools for building quality APIs
	Productionizing models with CI and CD
	Tools like PySpark, PyTorch, and Spark for model production

### **UX Career Track**

**Program Length:** 480 Hours

Cumulative Final Exam: Cumulative Capstone Project Graduation Document: Certificate of Completion

Standard Occupational Codes / Potential Employment Titles: 15-1255.00 - Web and Digital

**Interface Designers** 

Sample of reported job titles: Technology Applications Engineer, Web Architect, Web Design

Specialist, Web Designer, Web Developer, Webmaster

## **Program Description / Objectives:**

Each subject in this course will cover a key aspect of user experience and will feature a combination of materials, including videos, articles, hands-on design projects, and career-related coursework.

In addition to mini-projects to reinforce specific design concepts, you'll complete three portfolio projects, including the capstone project. This will be the highlight of your portfolio.

While working on the projects, you'll:

- Identify a customer problem to solve
- Conduct competitive research
- Sketch, design, and build a prototype
- Perform usability testing and identify improvements

You'll be matched with a real company to complete a 40-hour industry design project that solves a business problem.

This UX course is for people who demonstrate an aptitude toward problem solving, have strong communication and collaboration skills, and have a background in adjacent fields.

Subject Title	Subject Description
Design Thinking	<ul> <li>Examine the philosophy from which user-centered design (UCD) and many innovation frameworks have emerged: design thinking. Grounded in empathy and a hands-on, iterative approach to problem solving, design thinking is the mindset you'll use to create effective user experiences. The key aspects of design thinking include: <ul> <li>Empathy: observe and engage the people you're designing a product for</li> <li>Problem definition: a good solution depends on addressing the right problem</li> <li>Ideation: a good solution depends on addressing the right problem through divergent and convergent thinking, consider many possible solutions</li> <li>Prototyping: test those possible solutions</li> <li>Testing: get feedback from real people that will help you improve your</li> </ul> </li> </ul>
	ideas and create solutions

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User Research	User research is central to UX design. When you engage users and understand their experience, you can move from being aware of a problem to understanding why the problem exists and what users want to see resolved. There are many different user research tools; this section will explore the most effective of them.
	Topics include: user research methods, research plans, recruiting users through screener surveys, diary studies, and interviews.
	In this UCD discovery unit, you'll work on some mini-projects to sharpen your user research skills and then apply those skills to your capstone project.
Synthesis and Presentation	Understanding the data you collect during the research phase will help you to make decisions that will reflect the interests of your users. In this unit, you'll learn the different methods you can use to synthesize research in order to keep your designs focused on your user.
	Topics include: synthesis best practices, affinity maps, empathy maps, personas, problem statements, journey maps, and research presentations.
Ideating and Designing	This section (part of the UCD design phase) is all about getting your design hands dirty, so to speak. Here are some of the things you'll dive into:  • Brainstorming solutions to the problem you're trying to solve (for your capstone project)
	<ul> <li>Learning how to write and map user stories that capture the intent of personas</li> <li>Learning the fundamentals of information architecture (to help you</li> </ul>
Sketching, wireframing and UI	create and express your capstone project's structure and flow)  In this section of the UCD design phase, you'll bring your designs to life, first as sketches and then through wireframing. You'll also be introduced to several design tools, including Sketch and Adobe XD, learn how to conduct a guerilla usability test to validate your sketches, and learn how to apply interaction design principles to your designs. You'll also explore the world of user interface design in order to make your designs more accessible and engaging.
Prototyping and Presenting	In the final phase of the UCD process, evaluation, you'll create a prototype of your capstone project's red routes. In this section, you'll also learn when, why, and how to use different evaluative testing methods to improve your project. You'll also put together a comprehensive case study of your capstone journey and give a presentation about your project.
Design Sprint	Like most creative professions, your work as a UX designer is often going to be interrupted by urgent, unexpected projects. Don't worry, though—after working through this unit, you'll be prepared! In this unit, you'll use the design sprint process to sharpen your skills.
	You'll work through:  • A Hackathon-style project to practice working through a design sprint

	End-to-end design while working under tight deadlines
Special Topics	This unit explores topics like psychology and empty states that will take your designs from good to great by teaching you how to craft designs that lead to increased engagement, continued use, and conversion.
	Topics include:  Onboarding flows  Empty states  Strategy and service design  The future of UX
Industry Design Topic	<ul> <li>While working on the industry design project, you'll:</li> <li>Collaborate directly with a client for four weeks</li> <li>Dive deeper into an area of the UX design process you're especially interested in: competitive research, user research, usability testing, redesign recommendations</li> <li>Set yourself apart from other bootcamp graduates with a personalized portfolio</li> </ul>

## **UI/UX Design Career Track**

**Program Length:** 660 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

Standard Occupational Codes / Potential Employment Titles: 15-1255.00 - Web and Digital

Interface Designers

Sample of reported job titles: Technology Applications Engineer, Web Architect, Web Design

Specialist, Web Designer, Web Developer, Webmaster

## **Program Description / Objectives:**

The demand for UI/UX designers is at an all-time high. Companies are constantly seeking out digital opportunities to improve their product experience. As a result, competition is growing amongst employers for designers who can build products that are both beautiful and easy to use. Today, UI and UX designers enjoy high job satisfaction, varied creative challenges, a chance to work with ever evolving technologies, and great pay.

Springboard's UI/UX Design Career Track is designed to train you on job ready UI/UX skills, including core design principles, tools and best practices. You'll work on 4 portfolio projects covering different types of design techniques that you'll use as a UI/UX designer. By the end of the course, you'll have a complete UI/UX skill set to succeed in any design role.

The UI/UX Career Track is for people who demonstrate strong visual, creativity and communication skills. All backgrounds are welcome.

While working on the projects, you'll:

### Capstone 1

- Develop an understanding and practice the end-to-end design process (discovery/design/validation)
- Conduct and synthesize secondary and direct user research
- Identify a clear problem statement
- Ideate possible solutions
- Build low fidelity
- Develop a style guide
- Design high fidelity wireframes
- Conduct usability testing
- Present solutions and design journey to stakeholders

### Design Sprint

- Learn about different design processes that are commonly used by agile teams, including Lean UX and Google Ventures (GV) design sprints
- Learn about and experience a modified version of the GV design sprint
- Move through the design process in a time-constrained format

### Capstone 2

• Simulate what it's like to work in a team that is relying on you to hit deadlines

- Learn to make strategic and intentional decisions under constraints (including making choices about which tools in your toolbox you use because you can't use them all)
- Become proficient at time-boxing your work
- Become adept at working with business goals
- Bolster your ability to work independently and prep for your entrance into the job market Industry Design Project
  - Gain experience working with a real company
  - Provide your insights and support to develop new products and improve their existing solutions using your knowledge and expertise in competitive research, user research, usability testing, redesign and/or redesign recommendations, resigning mockups and UI
  - Apply all of your course learnings and hone your professional and collaborative skills
  - Become proficient at time-boxing your work
  - Become adept at working with business goals
  - Bolster your ability to work independently and prep for your entrance into the job market

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Subject Title	Subject Description
UX Foundations	Grounded in empathy and a hands-on, iterative approach to problem-solving, design thinking is the mindset designers like you will use to create effective user experiences. This section of the course will introduce you to the core stages of design thinking. You'll also learn about UI/UX design roles and the skills every designer needs to be successful.
	Topics Covered:  • UI and UX Design Roles and the Skills You Need to Land Them  • UI vs. UX Design  • Design Tools: Sketch, Figma, and Adobe XD  • The Core Stages of Design Thinking  • Empathy  • Define  • Ideate  • Prototype  • Test  • Divergent and Convergent Thinking  • Brainstorming and Gamestorming  • Observational Empathy
Conducting Research	At its core, design is about solving problems, so identifying the problem and the user you're solving it for will help you to create an exceptional solution. When you begin a new design project, you'll frequently need to conduct research to understand the problem space you're working in and form a hypothesis. You'll also need to conduct user research by talking with users and synthesizing their feedback to understand why the problem exists and what users want to see resolved. Of course, once you've collected all this information, it'll be time to synthesize your findings through the use of tools like empathy maps and personas before presenting your findings to stakeholders.

# Topics Covered:

- UX Research Methods and How to Choose the Right One for Your Work
- Generative Research
- Secondary Research
- Competitive Research
- Ouantitative Research
- Qualitative Research
- Competitive Usability Testing
- Usability Heuristics
- Research Plans
- Recruiting Users with Screener Surveys
- Conducting Interviews
- Synthesizing Your Research
- Empathy Mapping
- Creating Personas
- Writing Problem Statements
- Creating Journey Maps
- Presenting Your Synthesized Research to Stakeholders

# Designing, Ideating, & Information Architecture

In this section of the course, you'll learn how to make design decisions and ideate a variety of solutions to the problem you've identified through your synthesized research. One tool you'll use to do this is user stories, which will help you identify the functional needs of your product. Once you've identified a solution, you'll use information architecture best practices to figure out how your user will move through and interact with your product.

### **Topics Covered:**

- Solution Ideation
- Creating User Stories
- Information Architecture
  - o Navigation
  - o Sitemaps
  - o User Flows
  - Content through Card Sorting

# Foundations of UI Design

From the beginning of the course, you'll build out your UI design toolbox with the help of UI exercises woven throughout the course. In this section, you'll begin to apply these skills to your designs, digging deep into the fundamental and advanced UI design techniques every UI designer should know. User Interface (UI) design is what makes a design engaging and delightful to use; it inspires a user to feel a particular way when engaging with a product. Using typography, colors, and layouts, you can inspire feelings of trust and delight as users navigate your site or app. You'll develop style guides that define the visual language of your projects.

Topics Covered:

- Visual Principles
  - o Balance
  - o Scale and Proximity
  - o Alignment
  - o Visual Hierarchy
  - o Repetition
  - o Contrast
  - o Negative and Implied Space
  - o Color Theory
- UI Principles
  - o Usability Heuristics
  - o Ease-of-Use
  - o Consistency
  - o Progressive Disclosure
  - o Reducing Cognitive Load
  - o Information Hierarchy
  - o Space Distribution
  - o Discoverability
  - Feedback -- Error and Success Responses
- UI Elements
- UI Patterns
- Material and iOS Guidelines
- Interaction Behaviors and Principles
- Designing for the Different States
- Understanding Brand Platforms
- Using Brand Platforms to Define a Product's Visual Style
- Developing Design Systems
- Style Guides
  - o Logo
  - Color Palettes
  - o Fonts
  - o Iconography
  - o Photography and Imagery

# Sketching & Wireframing

Creating low fidelity design sketches is the first step in the march towards high fidelity designs. Sketching is an easy, affordable way to get your ideas out of your head and onto paper, where you'll more easily be able to see the changes or adjustments that you'll need to make. Once you've created sketches of your product, the next step is to create wireframes. Wireframes are often digitized versions of your sketches. Creating a low fidelity digital version of your product will enable you to identify critical design decisions that you need to make, while still offering enough flexibility that you don't need to fixate on perfecting your designs yet.

### Topics Covered:

- Sketching Principles
- Sketching Red Routes

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	Guerilla Usability Testing
	Responsive Design
	Wireframing
	Creating Wireflows
High-Fidelity Design	Once you have your style guide sorted out and a series of wireframes to work with, it's time to create high-fidelity mockups of your design. However, this doesn't just mean making your designs look beautiful (which you'll do — don't worry!); it also means making your designs accessible and inclusive so that everyone can use your product. You'll refine your style guide as you work on your screens and you'll also learn how to create animations that align with your style guide and brand platform.
	Topics Covered:  Inclusive Design and Designing for Accessibility Building High-Fidelity Mockups Designing Efficiently with Tools Interaction Patterns Animation tools Designing animations and interactions
Prototyping &	As any designer will tell you, prototyping and testing are essential tools
Testing	used to identify problems and validate design decisions. In this section of the course, you'll build a clickable prototype, learn how to set up and facilitate usability test sessions, and synthesize your findings to determine if you need to redesign your prototype.  • Building a Prototype  • Conducting Usability Tests  • Remote Usability Testing  • Moderated Usability Testing  • Other Evaluative User Research Methods
	Synthesizing Test Findings
	Prototype Iteration
Communication Best Practices	As a UI/UX designer, you'll be in frequent communication with developers, team members, clients, and other project stakeholders so being able to collaborate and be a team player is essential. It's also important to be able to share information about the work you've done and tell a compelling story about your designs. This section of the course will teach you how to effectively communicate with different audiences. Topics Covered:
	Collaborating and Communicating with Developers
	How to Prepare for Handing Off Designs  How to Prepare for Handing Off Designs
	Handoff Tools like Zeplin  Particle Market Difference Control of the Control
	Presenting Your Work to Different Stakeholders  The Grant Formula of the Present Stakeholders  The Grant Formula o
	The Components of an Effective Presentation
	Creating a Case Study
	Receiving and Giving Feedback

	Email and In-Person Communication
	<ul> <li>Prioritization and Time Management</li> </ul>
Special Topics	This course will go beyond the basics of UI/UX design to take on some of the specialized skills that hiring managers find highly valuable. You'll use these specialized skills to show off your knowledge and experience with the latest trends in UX and UI design.  • Product Types: Best practices and solutions  • Ecommerce & Browsing  • Social Media & Messaging  • Dashboards & Data Design  • Music & Media  • Business-to-Business and Business-to-Consumer Products  • The Psychology of Design  • Persuasive Design  • Anticipatory Design  • Gamification and Behavior Change  • Dark Patterns  • The Business of UX  • The Product Life Cycle  • Working with Constraints  • Competitors and Success Criteria  • Competitive Research

## **Software Engineering Career Track**

**Program Length:** 790 Hours

**Cumulative Final Exam:** Cumulative Capstone Project **Graduation Document:** Certificate of Completion

Standard Occupational Codes / Potential Employment Titles: 15-1252.00 - Software

Developers: 15-1254.00 - Web Developers

Sample of reported job titles: Technology Applications Engineer, Web Architect, Web Design Specialist, Web Designer, Web Developer, Webmaster, Application Developer, Application Integration Engineer, Developer, Infrastructure Engineer, Network Engineer, Software Architect, Software Developer, Software Development Engineer, Software Engineer, Systems Engineer

## **Program Description / Objectives:**

The demand for software engineers is at an all-time high. Companies are constantly seeking out developers to build new products and applications, or to improve existing ones. As a result, competition is growing amongst employers for developers who can build products that are both powerful and easy to use. Today, software engineers enjoy high job satisfaction, varied problem solving challenges, a chance to work with ever-evolving technologies, and great pay.

Springboard's Software Engineering Career Track is designed to train you on job-ready web developer skills, including core programming languages, tools, and technologies. You'll work on 4 portfolio projects covering the front end, back end, and full stack. By the end of the course, you'll have a complete programming skill set to succeed in a web development role.

The Software Engineering Career Track is for people who already have basic skills in HTML, CSS, and JavaScript. All backgrounds are welcome.

While working on the projects, you'll:

## **Cumulative Project 1 (Hacker News Clone)**

- Get students comfortable reading external documentation
- Make sure they can successfully query and route an external API on the client-side
- Gives students hands-on experience with DOM Manipulation with the jQuery library
- Build basic authentication and permissions
- Gain experience with object-oriented programming and array methods in JavaScript
- Use Twitter Bootstrap for CSS styling
- GitHub experience

### **Twitter Clone**

- Get students comfortable working with a large codebase that contains unfamiliar code, and reading the documentation for that codebase
- Teach students how to add new back-end functionality to an existing codebase like logout and adding WTForms to user profiles
- Create and configure a virtual environment in Flask
- Create and populate a database through the command line
- Conceptually understand existing security authorization and authentication
- Implement LIKES for Warbler's version of Tweets
- Test all functionality
- Fix back-end bugs that other programmers have left in

• GitHub experience

# **Capstone Project 1**

- Students learn how to create a functional database driven website from an external API
- Give students freedom to explore and work with existing APIs and implement a website of their choice
- Set up a PostgresSQL database and create their own database models through SQLAlchemy
- Use Flask and Python and set up routes for HTTP requests
- Test all of their functionality
- Give students experience working in a development environment
- Deploy sites to production with Heroku
- Give students experience creating a full-stack application with a Python back-end and JavaScript front-end they designed themselves
- CRUD functionality
- Functionality that goes beyond CRUD
- GitHub experience

# **Cumulative Project 2 (Jobly)**

- Create an API through Node, Express, and PostgreSQL
- Set up a database and configure the API to respond to various requests routes like GET, POST, and PATCH with different behavior and data
- Build off of previously completed sections of the project and update routes for each new section
- Work with one-to-many and many-to-many relationships between tables and ensure the API returns JSON that reflects these relationships
- Add in authentication and authorization, including an API key
- Unit testing
- Integration testing
- GitHub experience

### **Capstone Project 2**

- Allow students to brainstorm ideas and create more complex full-stack website database-driven website off an external API with the entire technology stack they've learned in the course
- Allow students with a larger degree of freedom than the first capstone
- Students typically use React for the front end and Node/Express for the back-end of their application, but a Python/Flask framework is also allowed
- Set up a database and create database models with one-to-many and many-to-many relationships
- Use ReactJS to show competency with modern web libraries
- Gain experience with asynchronous requests
- Configure authorization, authentication, and permissions
- CRUD functionality
- Functionality that goes beyond CRUD
- Create an API for the site and configure the routes for the API
- Test every piece of functionality
- Integration testing
- GitHub experience

Subject Title	Subject Description
Web Development Fundamentals	We begin the course by introducing you to the fundamentals of web development. You'll learn about the differences between front-end and back-end web development, the languages and technologies most commonly used in industry, and why you would use one language over another.
	Topics Covered:
Intermediate JavaScript, DOM Manipulation, and Event Driven Programming	JavaScript, known as "the programming language of the web," will provide the backbone of the web development stack. We'll start with a refresher of some JavaScript fundamentals before moving on to more intermediate content, such as leveraging JavaScript to begin building sophisticated, event-driven applications using the DOM.
	Topics Covered:  • JavaScript fundamentals refresher  • Higher Order Functions  • Callback functions  • Writing your own callback functions  • Selecting Elements  • What is the DOM?  • querySelector / getElementById  • Manipulating the DOM  • Changing text and styles  • Dom traversal  • Working with multiple elements  • JavaScript Events  • Different ways to add event listeners  • Event object  • Event delegation
Developer Fundamentals (Git/Terminal/Github)	Before starting with any web development, it's essential to develop a sound foundation in how to work as a developer. You'll be using Terminal and Git every single day as a professional developer, so understanding these topics is essential.
	Topics Covered:  • Terminal Fundamentals  • Navigating in the terminal  • Creating files and folders  • Git and GitHub Fundamentals  • What is Git  • Creating repositories, local workflow

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	o Branching
	o Merge conflicts
	o What is GitHub + signing up for an account
	o Cloning / Pushing to Github
Modern JavaScript	It's time to dive deeper into JavaScript. You'll start by learning one of
and Testing	the most fundamental skills that any developer needs to know: testing.
	As strange as it might sound now, you'll learn to write code that tests
	your code! You'll continue by learning the 5 latest features in the
	language and some of the trickier aspects, making sure your
	knowledge of JavaScript is at a professional level. These trickier parts
	will take a bit more time to master, but you'll see them everywhere as
	you learn more advanced libraries including React.
	you ream more advanced noraries including react.
	Topics Covered:
	Testing with Jasmine
	o Unit testing
	o Jasmine with HTML
	Advanced array methods
	o forEach, map, filter
	o reduce
	o some, every
	o find, findIndex
	• ES2015+
	o Arrow functions
	o Rest / spread
	o Object enhancements
	o Destructuring
	Object Oriented Programming
	o ES2015 classes
	o Inheritance
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How the Web Works,	Now that you've gotten past some of the tougher parts of JavaScript,
AJAX, and jQuery	it's time to learn about how it fits in the full stack web development
	ecosystem. So far, you've been using JavaScript to manipulate data on
	a web page, but JavaScript can also be used to fetch external data with
	a series of technologies known as AJAX. Before you dive deep into
	AJAX, we'll get you comfortable with how the web works and how
	to make HTTP requests as well as one of the tougher topics in
	JavaScript, asynchronous code
	Topics Covered:
	• jQuery
	o Dom manipulation
	o Selector caching

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	o Event delegation
	How the Web Works
	o HTTP
	o DNS
	o GET vs POST
	async/await
	o Asynchronous code
	o Async functions
	• AJAX with axios
	o AJAX
	o Axios
Python Fundamentals	Now that you're comfortable writing front-end code, let's move to the
1 yulon i undamentais	backend. We'll start by introducing you to the second language in this
	, , , , , , , , , , , , , , , , , , , ,
	course, Python. You'll get comfortable with the language just like you
	did with JavaScript and see some of the key differences and
	similarities between Python and JavaScript.
	Topics Covered:
	Python Introduction
	Data Structures In Python
	Intermediate Python
	Object Orientation in Python
Flask Fundamentals	Once you have a good grasp of Python, we'll move on to building
	web applications using the highly popular web framework Flask.
	You'll build full stack applications and learn about essential backend
	concepts like server-side templates, rendering, redirecting, cookies,
	sessions, and much more.
	sessions, and mach more.
	Topics Covered:
	Topics Covered.
	Eleak Eva dementale
	• Flask Fundamentals
	Server Side Templates with Jinja
	• Flask Testing
GOY 1.D 5-	Cookies and Sessions
SQL and PostgresQL	SQL is foundational towards building any relational database backed
	application and has been the standard for over 40 years. In this section
	we'll get started working with databases and SQL. You'll master the
	fundamental commands and then get comfortable with aggregates,
	joins, and data definition language.
	Topics Covered:
	What is SQL
	Relational Databases
	Installing Postgres
	- matthing rostgres

	CDIID. COI
	CRUD in SQL     SELECT.
	• SELECT
	• WHERE
	Aggregate Functions
	• DDL + Joins
	• DDL
	• Joins
	Joins Continued
Intermediate Flask	Now that you have a solid understanding of full-stack development and databases, we'll move onto building more complex web applications. You'll be introduced to an ORM called SQLAlchemy which allows you to use your knowledge of SQL but handle database operations in Python. You'll start building JSON APIs and secure applications with hashed passwords and authentication and authorization. Finally, you'll learn how to make HTTP requests from the backend, which will allow you to interact with most APIs to fetch and send data to and from external data sources.
	Topics Covered:
	• SQLAlchemy
	Building JSON APIs
	Making API Requests with Python and Flask
	Authentication with Cookies and Sessions
	Intermediate GitHub and Terminal
Node and Express Fundamentals	Now that you're comfortable building backend applications in Python, let's revisit JavaScript, but on the backend! You'll learn about Node.js, one of the most popular technologies on the web and how to use it's asynchronous model to build performant applications.
	Topics Covered:
	Command line scripts with Node and NPM
	o What is Node + Installing Node
	o What is NPM
	o Command Line Scripts with Node
	Async in detail (promises / callbacks)
	o Async Review
	o Callbacks
	o Promises
	o Async / Await
	<ul> <li>Testing with Jest and Node</li> </ul>
	o Installing Jest
	o Matchers
	Express Introduction
	o What is Express

	<ul> <li>The request / response cycle with Express</li> <li>Testing with Supertest</li> <li>Error handling with Express</li> <li>Routing and Middleware</li> <li>Express Router</li> <li>Using middleware</li> <li>Testing middleware</li> <li>Rendering templates with Pug (or Nunchucks / EJS)</li> <li>What are server side templates</li> </ul>
D 1111 E 11 Ct 1	o How to use Pug
Building Full Stack Applications with Node and Express	Take your knowledge of SQL and connect it with Node and Express using the pg module. You'll continue to explore some more of the advanced features of Express including authentication and authorization using JSON Web Tokens.
	Topics Covered:
	<ul> <li>Node-pg introduction</li> <li>Getting started with Node-pg</li> <li>The Node / SQL Ecosystem</li> <li>Advanced Object Oriented patterns</li> <li>Advanced Object Oriented patterns</li> <li>Testing OO Code</li> <li>Further Study: Knex / Sequelize / ORMs</li> <li>Building and testing JSON APIs</li> <li>REST</li> <li>Testing APIs</li> <li>Documenting APIs</li> <li>Authentication and Authorization with bcrypt and JWTs</li> <li>Storing passwords securely with bcrypt</li> <li>Using JWTs for Auth</li> <li>Further Study - Socket.io</li> <li>Further Study - Web Scraping</li> </ul>
ReactJS Fundamentals	Now that you've built a few full stack applications, it's time to move back to the frontend and learn a framework. We'll be focusing on one of the most popular and rapidly growing frameworks, React.js. Written by Facebook, this framework allows for building robust applications that can scale easily.
	Topics Covered:
	React Introduction     What is React     Webpack / Babel / JSX

	Crasta Dagat A
	o Create React App
	• Props
	o What are props
	o Default props
	o Proptypes
	o props.children
	State
	o What is state?
	o useState
	o useState patterns
	o Testing with Enzyme
	Events and Forms
	E :4 B
	o Testing Events and Forms
Intermediate ReactJS	Once you have a solid grasp on what React is and how to build components and simple applications, it's time to layer on more complexity with a few additional built-in hooks. You'll learn how to include side effects in your components with useEffect, manage state with useContext, and handle complex state with useReducer.
	Topics Covered:
	<ul> <li>Lifecycle methods / useEffect <ul> <li>useEffect Introduction</li> <li>useEffect on mount</li> <li>useEffect on update</li> <li>useEffect on unmount</li> </ul> </li> <li>Context API / useContext <ul> <li>What is Context</li> <li>useContext</li> </ul> </li> <li>useReducer <ul> <li>What is a reducer</li> <li>useReducer</li> <li>useReducer</li> <li>useReducer</li> <li>useReducer</li> <li>useReducer</li> <li>useReducer</li> <li>UseReducer + useContext for shared global state</li> </ul> </li> <li>Writing Custom Hooks <ul> <li>React Router</li> <li>Using React Router</li> <li>Link and NavLink</li> <li>Redirect / Switch</li> </ul> </li> </ul>
Redux	As your React applications grow, managing global state can become quite a challenge. While the Context API is an excellent option, sometimes you need a bit more when scaling. Redux is another option for state management that has the ability to scale to massive codebases including those at Facebook.

	Topics Covered:
Data Structures and Algorithms	<ul> <li>Redux Introduction</li> <li>What is Redux</li> <li>Vanilla Redux</li> <li>React/Redux</li> <li>Integrating React with Redux</li> <li>React/Redux hooks</li> <li>Async Redux</li> <li>Async redux introduction</li> <li>Redux thunk</li> </ul> Not only are Data Structures and Algorithms essential for succeeding in interviews, they are also an important topic for understanding how
	to architect applications and make the right tradeoffs regarding performance.
	Topics Covered:

# **Cyber Security Career Track**

**Program Length:** 380 Hours

Cumulative Final Exam: Cumulative Capstone Project Graduation Document: Certificate of Completion

Standard Occupational Codes / Potential Employment Titles: 15-1212.00 - Information

Security Analysts

Sample of expected job titles: Information Security Officer, Information Security Specialist, Information Systems Security Analyst, Information Systems Security Officer (ISSO), Information Technology Security Analyst (IT Security Analyst), Information Technology Specialist, Network Security Analyst, Systems Analyst

#### **Program Description / Objectives:**

With data migrating to the cloud and growing geopolitical concerns around security and privacy, many companies are investing in their cybersecurity expertise. They are looking to protect and defend their data through the identification, analysis, and mitigation of threats.

This course is designed to train you on job-ready cybersecurity analysis skills, including the core mindset, tools, and best practices. You'll work on 30+ technical labs, 30+ mini-projects, and 1 capstone project covering end-to-end analyses and processes you will work on as a cybersecurity analyst. The course covers topics such as threat modeling, host-based security, network security, identity and access management, application security, network scanning, packet capture analysis, and vulnerability assessment. Additionally, the course includes the use of tools such as Wireshark, Splunk, Kali Linux, and Nmap.

<b>Subject Title</b>	Subject Description
Cybersecurity Fundamentals	This unit introduces you to the fundamentals of cybersecurity through a hands-on journey of recognizing basic IT security threats and various ways to mitigate those threats. This involves an exploration of red-team (offensive security professionals) vs. blue-team (defensive security professionals) spheres of work, setting you up for the first, user-facing domains of cybersecurity: host-based security.  Topics Covered:  Threat actor types and attributes (hackers, DarkNet, social engineering, etc.)  Three-legged stool (CIA)  Intro to Security+ certification  Red- vs. blue-team  Threat-modeling
IT Project Management	Given that you'll be expected to put together several project documents throughout this course, this unit walks you through the ins and outs of creating IT project plans. It'll provide you with a couple of templates and

an opportunity to put those templates to the test with two mini-projects. Once you are comfortable creating smaller-scale projects in this unit, you'll be ready to move onto the next unit, where you'll be tasked with creating more complex project plans.

# Topics Covered:

- Principles and practices of IT project planning
- Create your own IT project plan

# Host-based Security

This unit will focus on host security, namely workstation and servers. It includes patching, hardening, and secure configuration. These activities are critical to defending and securing servers and workstations from threat actors and are often the first line of defense against attacks.

- Topics Covered:
- Operating system hardening
- System patching
- Virtualization technology
- Securing computer hardware and peripherals

# Network Security

The Network Security unit further matures the blue-team perspective by introducing you to the networking security skillset. This lab-heavy unit will include discussions around network architecture, security scanning, and network hardening. Network security is a broad term that covers a multitude of technologies, devices, and processes. In its simplest term, it is a set of rules and configurations designed to protect the integrity, confidentiality, and accessibility of computer networks and data using both software and hardware technologies. Proper network security helps businesses meet mandatory compliance regulations, protect customer data, and reduce the risk of legal action. Without a secure infrastructure and the expertise to remedy an issue, critical performance functions for users and computer programs may not be executable.

#### Topics Covered:

- Network design
- Cloud security and server defense
- Ports and protocols
- Network attacks
- Firewalls and IDS/IPS
- OSI and TCP/IP models
- Securing wired networks
- Securing wireless networks

# Identity and Access Management

Identity and Access Management (IAM) is one of the most important disciplines within cybersecurity. It aims to manage user identities and their access to enterprise resources and data. IAM governance and programs—including policies, processes, and technologies—manage user identities and access, as well as what a user can do within a system through authentication, authorization, and accounting.

# Topics Covered:

- Authentication models and components
- Access control models defined
- Rights, permissions, and policies

# Security Assessment and Testing

In the Security Assessment and Testing unit, you will learn how to conduct security assessments and recommend remediation activities. You will also learn how to create Information Security (IS) audit test plans, which will give you insight into how IS auditors approach their engagements. Exposure to advanced concepts around web security testing and the use of Kali Linux is also included. Mini-projects in this unit will allow you to explore another side of penetration testing, real-world vulnerability management challenges, and software testing plans. Labs in this unit will give you another slice of the red-team world, taking you through the attacking web servers, exploring a vulnerable web application, and cracking passwords.

# Topics Covered:

- Conducting risk assessments and audits of controls
- Assessing vulnerabilities
- Vulnerability remediation

# Security Operations

In the Security Operations unit, you'll learn blue-team security operations to include security toolsets, encryption, and incident response workflows and procedures. Industry-relevant, leading tools you'll use in this unit include Splunk and Wireshark. In addition, foundational scripting skills that will make you a successful cybersecurity analyst, using Python, will also be covered.

#### Topics Covered:

- Monitoring methodologies
- Using tools to monitor systems and networks
- Encryption and hashing concepts
- Public key infrastructure

Security protocols Redundancy planning • Disaster recovery planning and procedures • Programming primer Physical security Asset security Software is usually developed with a strong focus on functionality, not Application Security security. In many cases, security controls are bolted on as an afterthought (if at all). To get the best of both worlds, security and functionality have to be designed and integrated at each phase of the development life cycle. Security should be interwoven into the core of a product and provide protection at the necessary layers. This unit will cover the complex world of secure software development and the bad things that can happen when security is not properly interwoven into applications. Topics Covered: • Software development lifecycle • Secure Software development practices • Web security • Database security CompTIA In this final unit, you will run through simulated Security+ Exams and will Security+ prep receive study tips to obtain the Security+ credential. Security+ is an industry-wide recognized certificate for cybersecurity professionals demonstrating they have fundamental cybersecurity skills and will aid graduating students to more easily secure a job. Certificate achievement is also a requirement in order to qualify for Springboard's job guarantee. A voucher to cover the cost of the exam is included in the course cost. Topics Covered: • Exam topics refresh and review Exam state of readiness

Mock Exams

# **Intro to Design**

**Program Length:** 50 hours **Cumulative Final Exam:** None

**Graduation Document:** Certificate of Completion

Standard Occupational Codes / Potential Employment Titles: n/a

Sample of expected job titles: 15-1255.00 - Web and Digital Interface Designers

**Program Description / Objectives:** This course teaches you the foundational skills in UI/UX design, having you complete hands-on projects and learning more about what the day-to-day life of a designer looks like. This course will allow you to evaluate if a career in design and a self-paced, online program with plentiful 1-on-1 support is right for you.

Subject Title	Subject Description
Design 101	While working through this subject, you'll be introduced to fundamental design concepts, learn about the design thinking process, and begin to sharpen your ability to recognize successful designs (and understand why they're successful).  Topics covered:  Stages and vocabulary associated with an end-to-end design project  A day in the life of a designer
Research	User research is particularly important to designers, as understanding the motivations and needs of a user results in the creation of a better product. Topics covered:  • An introduction to different types of research • A deep-dive into competitive research • Building personas
Ideation & Sketching	To design a high-quality product, you'll first need to spend some time thinking outside the box and brainstorming possible solutions. That's where ideation comes in. Ideating solutions is the process of brainstorming an array of ideas and identifying the ideas that might be best — while still allowing for the possibility that you'll need to adapt those ideas as you begin working on your designs. Sketching is one great way to brainstorm possible solutions.  Topics covered:  Sketching techniques  The Crazy 8s method for quick sketching
Design Tools	Understanding the theory behind design decisions may be the foundation upon which a design career is built, but knowing how to use tools to bring your designs to life is also essential. In this unit, you'll learn how to use either Sketch or Figma by following along with some Springboard-created tutorials.  Topics covered:

	<ul> <li>Learning how to use Sketch or Figma to create designs</li> <li>The benefits of being a designer</li> <li>The challenges designers frequently face</li> </ul>
Low Fidelity Design	Low fidelity designs are rough representations of the product a designer is working on. Creating low fidelity designs allows a designer to tweak and iterate the main aspects of their design, without spending too much time or effort in the creation process. Low fidelity designs are intended to help a designer validate their ideas early on in the design process.  Topics include:  Building low fidelity designs  Design patterns  Wireframes
High Fidelity Design	High fidelity designs look and feel like real designs but are still adjustable and iterative. Designers use design tools like Sketch and Figma to create high fidelity designs that can then be used in usability tests and other evaluative forms of research. Designers use the results of these tests to improve and refine their high fidelity designs.  Topics include:  Style guides Designing in high fidelity Usability testing

# **Data Science Career Track Prep**

**Program Length:** 60 hours

**Cumulative Final Exam:** Cumulative Case Study **Graduation Document:** Certificate of Completion

**Standard Occupational Codes / Potential Employment Titles**: 15-2051.00 - Data Scientists **Sample of expected job titles**: O'NET Online title of Data Scientists represents an occupation

for which data collection is currently underway.

# **Program Description / Objectives:**

In this mentor-led course, you'll spend 4-6 weeks learning foundational skills in Python programming and statistics, as well as introductory data science concepts—all via a curriculum specifically designed to help you pass the Data Science Career Track admissions technical skills survey.

Upon successful completion of this course, you will be able to:

- Use Python to complete real-world coding exercises and begin your data science journey
- Apply statistics to tackle problems
- Determine whether the Data Science Career Track is right for you by trialing our unique Springboard learning experience

Subject Title	Subject Description
Intro to Data Science	In this unit, you'll find easy-to-understand resources that will build your understanding of the field of data science and what data scientists do. You'll become familiar with key aspects of the data science industry, the kinds of problems data scientists are trying to solve, and the techniques they frequently use to solve them.
Introductory and intermediate Python	Python has become a lingua franca of data science. You will be introduced to fundamental aspects of programming, and by working on small projects in a hands-on coding environment, hone your skills to advance to the intermediate level.  Topics covered include:  Python syntax and control flow Lists and functions Dictionaries, strings and methods Data structures and algorithms
Intro to Descriptive Statistics	Statistics is the mathematical foundation of data science. Descriptive statistics, as the name suggests, describe a dataset, including its structure, patterns, and trends.  Topics covered:  Data distributions  Displaying and describing quantitative data, including histograms and stem and leaf plots  Scatter plots
Foundations of Probability	Probability is the science of uncertainty. A probability is a numeric measure between 0 and 1 that expresses how much or how little certainty you have about any phenomenon. As a result, anyone working in the fields of data science has to be intimately comfortable with the concepts associated with probability.  In this unit, you'll learn about some of the basic, but important, aspects of probability, including:  Calculating basic probabilities via counting  Independence

	<ul><li>Conditional probability</li><li>Bayes Theorem</li></ul>
The Data Science Toolbox	This section of the course will introduce you to some of the tools of the data-science trade that will help you analyze and visualize data as well as, manage your projects. Topics include:  • Anaconda • Git and GitHub • Jupyter Notebook • NumPy and matplotlib • Pandas

# **Software Engineering Career Track Prep**

**Program Length:** 70 hours

Cumulative Final Exam: Technical Skills Survey - to Enroll in the Software Engineering

Career Track

**Graduation Document:** No Certificate

Standard Occupational Codes / Potential Employment Titles: 15-1252.00 - Software

Developers; 15-1254.00 - Web Developers

Sample of expected job titles: n/a

**Program Description** / **Objectives:** A six week program designed to teach students the fundamentals of HTML, CSS, and JavaScript - in order to gain the necessary skills to help them pass the Software Engineering Career Track admissions technical skills survey.

Subject Title	Subject Description
Foundations of HTML	The foundations of HTML unit teaches students the basics of HTML. This unit will give them all of the knowledge they'll need to work with HTML in our Software Engineering Career Track.  In this unit they'll learn what HTML is, how to create HTML elements, the various components of elements like <body> and <h1> tags, working with lists, creating tables and forms, submitting form data, and more.</h1></body>
	They will also have two small exercises where students create HTML pages, in order to solidify their knowledge.  The topics covered include:

#### • HTML Fundamentals

HTML Tables and Forms

# Foundations of CSS

The foundations of CSS unit teaches students the basics of HTML. This unit will give them all of the knowledge they'll need to work with CSS in our Software Engineering Career Track.

In this unit, students will learn the fundamentals of CSS, how the rules and hierarchy work for styling CSS, hexadecimal and how RGB colors work, various ways of manipulating fonts with CSS, CSS selectors including how to use ID property, the box model, formatting on screen elements with the border, width, height, and padding properties, how to display/hide elements with CSS, and more.

There are two mandatory exercises where students apply what they are learning hands on, and two smaller optional exercises if they want more practice.

# Topics include:

- CSS Fundamental
- Selectors and Specificity
- CSS Box Model
- CSS Display

# Foundations of JavaScript

The foundations of JavaScript teaches students the basics of HTML. This unit will give the basic knowledge of JavaScript that students will need to build from in the Software Engineering Career Track, and to pass our admissions Technical Skills Survey.

In this unit, students will learn what tools they'll need to write and run JavaScript code, how to declare variables, all of the basic data types, boolean logic and boolean operators, how to store and manipulate data in arrays, what objects are and how to use dictionaries, how to use for and while loops, and how to write and use functions.

They will have a series of practice problems at the end of every subunit to solidify the concepts they are learning, and comprehensive practice problems at the end of the unit.

#### Topic include:

- JavaScript Fundamentals
- Working with Primitive Data Types
- Program Logic and Flow
- Arrays
- Objects
- Loops
- Functions

	Practice Problems	
Technical Skills Survey	In this unit, students will prepare to take the admissions test for our Software Engineering Career Track. They will have the option to take a mock Technical Skills Survey (TSS), get up to speed with what the actual test will entail, and then take the Technical Skills Survey.	
	Topics include:  • How to Use the HackerRank Platform • A Mock TSS • Taking the TSS Entry Exam for SEC	

# **ACADEMIC POLICIES**

#### **SATISFACTORY PROGRESS**

Springboard's standards of satisfactory progress applies to all students. Students must continually maintain satisfactory progress in order to continue their education at Springboard. To maintain satisfactory progress students must achieve a pass in each subject, if a subject is failed the student must repeat that subject. Upon a second fail in the same subject the student will be withdrawn from the program. Maximum timeframe to complete any program is twelve (12) months from the start date.

#### **PROBATION**

During any course repeat the student is considered on probation. Based on the grade of the repeated subject the student will be considered making progress with a Pass, "P" or will be withdrawn from the program with a Fail, "F."

Special or Mitigating Circumstances: The Chief Academic Officer may waive satisfactory progress standard for special or mitigating circumstances outside the control of the student. The circumstances must be documented, and the student must demonstrate that these circumstances that had an adverse impact on the student's satisfactory progress in the program have been rectified and have a documented academic plan to obtain progress.

#### **GRADING SYSTEM**

At Springboard, mentors will provide a Pass or Fail for each subject area to track progress. However, each program is a single course. Therefore, there is one final grade on each student's transcript.

Grade Definition

P: Pass Has satisfactorily met all minimum program/course requirements F: Fail Has not satisfactorily met all minimum program/course requirements

Springboard will return all lessons, assignments, projects no later than 10 days after receipt.

#### **WITHDRAWAL**

A student may be deemed to have withdrawn from a program of instruction when any of the following occurs:

- The student notifies the institution of the student's withdrawal or as of the date of the student's withdrawal, whichever is later.
- The institution terminates the student's enrollment for failure to maintain satisfactory progress; failure to abide by the rules and regulations of the institution; absences in excess of maximum set forth by the institution; and/or failure to meet financial obligations to the School.

#### **ATTENDANCE**

In the case a student stops engaging within a course and obtains a fail in a subject area by not completing the subject in a timely manner, Springboard will reach out and discuss with the student lack of engagement and provide advisement.

#### LEAVE OF ABSENCE POLICY

Springboard's priority is to offer students flexibility with their learning schedule. If life gets busy, the students have a few options to take, depending on what they would like to do.

	Pause	Freeze
Payments	Stopped	Stopped
Mentor Calls	Stopped	Stopped
Curriculum Access	Allowed	Revoked
Online Community	Allowed	Revoked

Office Hours	Allowed	Revoked
Office Hours	7 THO W Cu	Revoked

#### **Pause Policy**

This is a great option when students take a vacation, a trip, or need some catch-up time.

#### Guidelines

- Students can use this option *once* during the course
- Students can pause weekly calls for up to 3 weeks
- Students can select to pause the course *now* or after their next mentor call
- Any future calls more than 24 hours out will automatically roll over to when students return from the pause

#### Things to Know:

- Students stay matched with their mentor; they'll pick up calls again once their pause is over (no action required on our end)
- Once students pause, they'll receive a confirmation email. If their pause is 2+ weeks, they'll receive an email one week before their pause ends to remind them it's coming to a close
- All students will receive the 28-hour reminder "Your call is coming up" email before their first call back with their mentor
- If the student does not return, he/she may be withdrawn or administratively put on a "Freeze"

#### **Freeze Policy**

A subscription freeze allows a student to put their billing on hold once during enrollment in a workshop. While they are frozen, students will lose access to the curriculum, online community, and office hours. They may also be rematched with a different mentor when they return, depending on capacity and availability.

#### Guidelines

- Students can freeze for any amount of time between four weeks and four months
- Students can select to freeze the course *now* or on a specific date (only the dates before their next billing date are shown in the selection)
- Any future calls more than 24 hours out will automatically roll over to when students return from the freeze

#### Things to Know:

- 1. Once students freeze, they'll receive a confirmation email
- 2. Students can return to the course in their billing tab
- 3. Accounts will be automatically cancelled and the student withdrawn if students don't return within four months

#### How to Freeze

If a student needs to freeze and will be able to freeze their account themselves, they can do so through their billing page. Underneath their payment information, there will be a link that says "I need to take a break."

If a student is unable to freeze their account, SAs can manually freeze them through the SA dashboard under "status".

# **Exceptions to the Freeze Policy**

Depending on the situation, administration can make exceptions towards the freeze policy, including:

- Extending the freeze duration (with credit)
- Providing additional call credit(s)
- Allowing students to freeze more than once

Typically, this is in the cases of a medical or personal emergency, special circumstance, or other situation that students reach out to administration.

#### **GRADUATION REQUIREMENTS**

A student will be eligible for graduation when:

- All required hours are earned;
- Has passed the course; and
- Has cleared all financial obligations.

#### STUDENT SERVICES

#### ACADEMIC ADVISING

Academic advising may be initiated by Springboard personnel or the student when the need is identified.

#### HOUSING

Springboard does not assume responsibility for student housing, does not have dormitory facilities under its control, nor offers student housing assistance. According to rentals.com for San Francisco, CA, rental properties within a five-mile radius start at approximately \$1,835.00 per month.

#### RESOURCE CENTER

All learning resources necessary for the programs are located within the online learning management system. Students have access to resources 24 hours a day / 7 days a week.

#### **CAREER SERVICES - THE SPRINGBOARD GUARANTEE**

We are committed to your success, and will support you fully in the transition into a career. We back our commitment with the "Springboard Guarantee": subject to the Terms below, we will refund 100% of your paid tuition if you are not offered a Qualifying Position (as defined in the Terms) within 6 months of receiving a Career Track certificate of completion.

A career transition involves focused, consistent effort. We put in this effort to help you make that transition, and ask for an equal commitment from you. Specifically, you shall satisfy the requirements below in order to be eligible for the Springboard Guarantee. If these requirements are not satisfied, you may still participate in the program and receive all of the advantages of career support, but you will not be eligible for the tuition refund. All terms, eligibility requirements, application conduct definitions are outline in the Catalog.

This Springboard Guarantee and Terms, along with the Springboard Terms of Service, set forth the entire understanding between you and Springboard with regard to the subject matter herein. Any provision of these Terms that is unenforceable shall not impact the enforceability of any other provision. Springboard shall have the sole discretion to determine whether the Terms have been satisfied and whether you are eligible for a refund of your tuition. Likewise, Springboard may waive any breaches in its sole discretion.

#### **Terms**

The following terms and conditions (the "Terms") apply to the Springboard Guarantee:

#### *Eligibility Requirements:*

- You must meet the course prerequisites outlined on pages 5-8 of this document
- You must be 18 years of age or older
- You must hold a Bachelor's Degree from any accredited educational institution in any subject by the date you are approved for completing the Career Track. This is <u>not</u> required for students in the Software Engineering Career Track and the Cyber Security Career Track.
- You must be proficient in spoken and written English, as determined by initial interactions with the Springboard Admissions team.
- You must be eligible to legally work in the United States, or in Canada if applying for positions in Toronto, for at least 2 years following graduation from the Career Track.
- You must be able to pass any background checks associated with jobs that you apply for.
  Without limiting the foregoing, if you fail to obtain a job offer directly or partially due to
  your failure to pass a background check associated with the job offer, you will not be
  eligible for the tuition refund.
- [For Cybersecurity Career Track students only] You must successfully pass the CompTIA Security+ certification exam upon course completion

# **Application Conduct**

#### Definitions

A "Qualifying Position" is defined as any role in the data science or analytics field as:

A salaried employee or waged employee working an average of at least 30 hours a week; A full-time (30 or more hours per week) contractor or intern for 3 months or longer; or A paid contractor or intern that has the potential to be extended or converted to a full-time role

Please note that while the specialization tracks offered within the Career Track prepare you for a career in a specialized field, we cannot guarantee that your first position will be in that field.

The "Metropolitan Areas" means the metropolitan areas surrounding the following cities for which the Springboard Guarantee applies: San Francisco Bay Area, CA; New York City, NY; Boston, MA; Chicago, IL; Los Angeles, CA; Washington DC; Atlanta, GA; Toronto, ON (Canada); Denver, CO;

Commitment to the Program and Your Own Success

We require that you fully commit to your job search and take our recommendations seriously. As a graduate of the Career Track, we expect you to be an active participant in your own success, and put significant effort into your own growth and your job search. Therefore, for the Springboard Guarantee to be applicable:

You must have completed all the mandatory requirements for graduation, including:

- You must complete 100% of the curriculum within 12 months of your start date, not including any freeze or pause granted to you by Springboard.
- You must receive a "pass" at program completion.
- You must have completed and passed all career development tasks that are (a) listed in the curriculum, in the order they appear in the curriculum, and (b) personally assigned to you by Springboard's career coaches. This includes without limitation taking all calls and mock interviews
- The 6-month guarantee period starts on the day you are approved for completion, after having completed the above mandatory requirements. During this period:
- You must be active in your job search and apply for a minimum of 4 Qualifying Positions in the Metropolitan Areas per week, in accordance with best practices prescribed by Springboard's career coaches. Notwithstanding the foregoing sentence, remote work is also acceptable provided that all other criteria are met.
- You must be active in building your network and reach out to at least 7 individuals per week and conduct 2 informational interviews per month. Outreach includes emailing, LinkedIn messages, meetups and conferences. An informational interview may be done in person, video chat or phone call. Being consistent in your networking including making contacts and following up is critical to one's success in the job search.

- You must schedule calls with a Springboard career coach at the frequency instructed by the coach.
- You should take guidance from your Career Services team, and follow their recommendations on your job search strategy including building your network and applying for job types that are a good fit for you. You should be applying for roles that are suited to your level of experience and areas of expertise, and maintain realistic expectations about what kind of first job in data science is right for you.
- You must provide Springboard Career Services team with a weekly summary of job-related activity in the tool provided by Springboard, including all job applications submitted and networking efforts made. You will also provide Springboard with further job-related information on request.
- You must respond to placement related communications from Springboard within 72 hours
- You must always act with reasonable and good faith efforts to obtain a Qualifying Position

#### **How This Guarantee Applies to You**

Without limiting the foregoing, situations that void this Springboard Guarantee include, but are not limited to:

- 1. You turn down a job offer for a Qualifying Position.
- 2. You decide not to conduct a job search for all or part of the 6-month job search period. Breaks in the job search due to extenuating circumstances may be approved by Springboard in its sole discretion.
- 3. You decide to search for a role that does not meet the Qualifying Position criteria above, or is outside of the data science field/industry.
- 4. You accept a role that does not meet the Qualifying Position criteria above, or is outside of the data science field/industry, before the 6-month guarantee period is over.
- 5. You do not put sufficient and consistent effort into your job search, as outlined above.
- 6. You do not want to or are unable to live and work in one of the Metropolitan Areas.
- 7. You do not communicate with Springboard Career Services consistently throughout your search, including notifying us of any offers you have received.
- 8. You lose your work authorization or do not have sufficient work authorization that meets the requirements above during your search, even if you did expect to have authorization or did at one time have appropriate work authorization during your Career Track program.
- 9. You become physically or mentally unable to conduct an effective job search as outlined above during the Career Track or guarantee period.
- 10. You do not apply for Qualifying Positions in the Metropolitan Areas as required above throughout the 6-month placement period.
- 11. You significantly change your job search strategy during the 6-month placement period, including without limitation changing the Metropolitan Area of search, or industry, unless agreed to in advance by Springboard.
- 12. You do not follow through with the interview process for Qualifying Positions in a timely and professional manner, including but not limited to not participating as expected by the

employer in the interview process by providing responses to employer communications, showing up on time for interviews, and providing documents or follow up as expected by employers.

- 13. You do not apply for jobs that are suitable for your background or experience as discussed in your calls with Springboard's Career Services team.
- 14. You no-show or reschedule/cancel a call with less than 24 hours notice with a career coach or mock interviewer 3 or more times.

#### **Certification for Reimbursement**

If you believe you qualify for a reimbursement, you must provide a written and signed certification that you have met all of the Terms, and have not been offered any Qualifying Positions, within one calendar month after the 6-month placement period.

#### General

This Springboard Guarantee and Terms, along with the Springboard Terms of Service, set forth the entire understanding between you and Springboard with regard to the subject matter herein. Any provision of these Terms that is unenforceable shall not impact the enforceability of any other provision. Springboard shall have the sole discretion to determine whether the Terms have been satisfied and whether you are eligible for a refund of your tuition. Likewise, Springboard may waive any breaches in its sole discretion.

#### **STUDENT RECORDS**

Student records will be maintained on site at the administrative site for five years from the last date of attendance. Transcripts are maintained permanently.

Students records contain the following information in addition to the name, address, e-mail address, and telephone number of each student who enrolls in Springboard, whether or not the student completes the program/course:

- 1. Written records and transcripts of any formal education or training, testing, or experience that are relevant to the student's qualifications for admission to the institution or the institution's award of credit or acceptance of transfer credits including the following:
  - a. Verification of high school completion or equivalency or other documentation establishing the student's ability to do college level work, such as successful completion of an ability-to-benefit test;
  - b. Grades or findings from any examination of academic ability or educational achievement used for admission or college placement purposes;
  - c. Personal information regarding a student's age, gender, and ethnicity if that information has been voluntarily supplied by the student;
  - d. Copies of all documents signed by the student, including contracts, instruments of indebtedness, and documents relating to financial aid;
  - e. Records of the dates of enrollment and, if applicable, withdrawal from the institution, leaves of absence, and graduation; and
- 2. A transcript showing all of the following:

- a. The courses or other educational programs that were completed, or were attempted but not completed, and the dates of completion or withdrawal;
- b. Credit based on any examination of academic ability or educational achievement used for admission or college placement purposes;
- c. The name, address, website address, and telephone number of the institution;
- d. The certificate granted and the date on which that certificate was granted;
- e. The courses and units on which the certificate was based;
- f. The grades earned by the student in each of those courses.
- 3. A document showing the total amount of money received from or on behalf of the student and the date or dates on which the money was received;
- 4. A document specifying the amount of a refund, including the amount refunded for tuition and the amount for other itemized charges, the method of calculating the refund, the date the refund was made, and the name and address of the person or entity to which the refund was sent;
- 5. Copies of any official advisory notices or warnings regarding the student's progress; and
- 6. A copy of any complaints received from the student.

# **GRIEVANCE PROCEDURE**

If students were to have an issue with the curriculum or their mentor, they are encouraged to immediately contact their Student Advisor. If a resolution cannot be reached, the student should document the concern in writing and make an appointment to speak with the Chief Academic Officer. The formal written concern must state the issue and desired outcome, and should include any documentation that supports the concern. The Chief Academic Officer will review the written statement and any supporting documentation, gather facts, and endeavor to provide a written response to the student within fourteen (14) business days. The Chief Academic Officer's decision is final.

A student or any member of the public may file a complaint about this institution with the Bureau for Private Postsecondary Education by calling 888.370.7589 toll-free or by completing a complaint form, which can be obtained on the bureau's Internet Web site, www.bppe.ca.gov.

# CANCELLATION, WITHDRAWAL AND REFUND POLICY

#### STUDENT'S RIGHT TO CANCEL

The program in which you are enrolling is distance education-not offered in real time. The institution will transmit the first lesson and materials to you within seven days after the execution of this enrollment agreement.

You have the right to cancel this enrollment agreement and receive a full refund at any time prior to receiving the first lesson and materials.

Cancellation is effective on the date the written notice of cancellation is sent to the institution at 22 Battery Street, Floor 11, San Francisco, CA 94111. You can also cancel by sending an email to hello@springboard.com Refunds will be paid within 45 days of cancellation unless the

cancellation occurs after the institution has mailed the first lesson and materials, but prior to your receipt of those documents, in such cases the institution shall make the refund within 45 days after your return of the materials in new condition.

This Institution shall transmit all of the lessons and other materials to the student if the student (a) has fully paid for the educational program; and (b) after having received the first lesson and initial materials, requests in writing that all of the material be sent. If the Institution transmits the balance of the material as the student requests, the Institution shall remain obligated to provide the other educational services it agreed to provide, such as responses to student inquiries, student and faculty interaction, and evaluation and comment on lessons submitted by the student, but shall not be obligated to pay any refund after all of the lessons are material are transmitted.

# WITHDRAWAL FROM THE PROGRAM

You may withdraw from the school at any time and receive a pro rata refund if you have completed 60 percent or less of the scheduled days in your program through the last day of attendance.

For the purpose of determining the amount of the refund, the date of the student's withdrawal shall be deemed the last date of recorded attendance. The amount owed equals the daily charge for the program (total institutional charge, minus non-refundable fees, divided by the number of days in the program), multiplied by the number of days scheduled to attend, prior to withdrawal.

For distance education students scheduled days is based on a five day week, which does not include Saturday or Sunday, or any defined holiday as enumerated in Section 6700 of the California Government Code.

Section 6700 of the California Government Code Holidays
New Year's Day (January 1)
Martin Luther King, Jr. Day (3rd Monday in January)
Lincoln Day (February 12)
Washington Day (3rd Monday in February)
Cesar Chavez Day (March 31)
Good Friday (date varies from year to year but usually occurs in March or April)
Memorial Day (last Monday in May)
July 4th
Labor Day (1st Monday in September)
Admission Day (September 9)
Columbus Day (2nd Monday in October)
Veterans Day (November 11)
Thanksgiving Day (4th Thursday in November)
Christmas Day (December 25)

If any portion of the tuition was paid from the proceeds of a loan or third party, the refund shall be sent to the lender, third party or, if appropriate, to the state or federal agency that guaranteed or reinsured the loan. If the student has received federal student financial aid funds, the student is entitled to a refund of monies not paid from federal student financial aid program funds.

# **TUITION AND FEES (California residents)**

	Student Tuition Recovery Fund (STRF)*		
Career Track Program	Non-Refundable	Tuition	Total Cost**
Data Science Career Track	\$5.50	\$11,394.50	\$11,400.00
Data Analytics Career Track	\$5.00	\$10,135.00	\$10,140.00
Data Engineering Career Track	\$6.50	\$13,133.50	\$13,140.00
ML Engineering Career Track	\$6.50	\$13,133.50	\$13,140.00
UX Career Track	\$5.00	\$9,535.00	\$9,540.00
UI/UX Design Career Track	\$7.00	\$14,303.00	\$14,310.00
Software Engineering Career Track	\$6.00	\$11,604.00	\$11,610.00
Cyber Security Career Track	\$5.50	\$11,334.50	\$11,340.00
Data Science Career Track Plus	\$7.50	\$14,932.50	\$14,940.00
Software Engineering Career Track		\$499.00	\$499.00
Prep	\$0		
Data Science Career Track Prep	\$0	\$499.00	\$499.00
Intro to Design	\$0	\$399.00	\$399.00

<sup>\*</sup>STRF: \$0.50 for every \$1,000 of tuition rounded to the nearest \$1,000.

# **TUITION AND FEES (Non-California residents)**

Career Track Program	Total Cost**
Data Science Career Track	\$11,140.00
Data Analytics Career Track	\$10,140.00
Data Engineering Career Track	\$13,140.00
ML Engineering Career Track	\$13,140.00
UX Career Track	\$9,540.00
UI/UX Design Career Track	\$14,310.00
Software Engineering Career Track	\$11,610.00
Cyber Security Career Track	\$11,340.00
Data Science Career Track Plus	\$14,940.00
Software Engineering Career Track	\$499.00
Prep	
Data Science Career Track Prep	\$499.00
Intro to Design	\$399.00

# **LOAN**

Springboard does not participate in federal and state financial aid programs. If a student obtains a loan to pay for an educational program, the student will have to repay the full amount of the loan plus interest, less the amount of any refund.

<sup>\*\*</sup>Charges for the period of attendance and the entire program.

Springboard offers no form of financial aid.

#### STUDENT TUITION RECOVERY FUND

The State of California established the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic loss suffered by a student in an educational program at a qualifying institution, who is or was a California resident while enrolled, or was enrolled in a residency program, if the student enrolled in the institution, prepaid tuition, and suffered an economic loss. Unless relieved of the obligation to do so, you must pay the state-imposed assessment for the STRF, or it must be paid on your behalf, if you are a student in an educational program, who is a California resident, or are enrolled in a residency program, and prepay all or part of your tuition.

You are not eligible for protection from the STRF and you are not required to pay the STRF assessment, if you are not a California resident, or are not enrolled in a residency program.

It is important that you keep copies of your enrollment agreement, financial aid documents, receipts, or any other information that documents the amount paid to the school. Questions regarding the STRF may be directed to the Bureau for Private Postsecondary Education, 1747 North Market Blvd., Suite 225, Sacramento, CA 95834, (916) 574-8900 or (888) 370-7589.

To be eligible for STRF, you must be a California resident or enrolled in a residency program, prepaid tuition, paid or deemed to have paid the STRF assessment, and suffered an economic loss as a result of any of the following:

- 1. The institution, a location of the institution, or an educational program offered by the institution was closed or discontinued, and you did not choose to participate in a teach-out plan approved by the Bureau or did not complete a chosen teach-out plan approved by the Bureau.
- 2. You were enrolled at an institution or a location of the institution within the 120 day period before the closure of the institution or location of the institution, or were enrolled in an educational program within the 120 day period before the program was discontinued.
- 3. You were enrolled at an institution or a location of the institution more than 120 days before the closure of the institution or location of the institution, in an educational program offered by the institution as to which the Bureau determined there was a significant decline in the quality or value of the program more than 120 days before closure.
- 4. The institution has been ordered to pay a refund by the Bureau but has failed to do so.
- 5. The institution has failed to pay or reimburse loan proceeds under a federal student loan program as required by law, or has failed to pay or reimburse proceeds received by the institution in excess of tuition and other costs.
- 6. You have been awarded restitution, a refund, or other monetary award by an arbitrator or court, based on a violation of this chapter by an institution or representative of an institution, but have been unable to collect the award from the institution.
- 7. You sought legal counsel that resulted in the cancellation of one or more of your student loans and have an invoice for services rendered and evidence of the cancellation of the student loan or loans.

To qualify for STRF reimbursement, the application must be received within four (4) years from the date of the action or event that made the student eligible for recovery from STRF.

A student whose loan is revived by a loan holder or debt collector after a period of noncollection may, at any time, file a written application for recovery from STRF for the debt that would have otherwise been eligible for recovery. If it has been more than four (4) years since the action or event that made the student eligible, the student must have filed a written application for recovery within the original four (4) year period, unless the period has been extended by another act of law.

However, no claim can be paid to any student without a social security number or a taxpayer identification number.

# MANAGEMENT, STAFF AND FACULTY

# **MANAGEMENT & STAFF**

# Co-Founders:

- Gautam Tambay, Chief Executive Officer
- Parul Gupta, Chief Operating / Academic Officer

Name		Title
Parul	Gupta	Co-founder, President
Gautam	Tambay	Co-founder, CEO
Seth	Greenberg	VP - Program Operations
Vince	Huang	VP - Product
Andrew	Moers	President, Consumer Business
Sudakshmina	Mandal	Head of Engineering
Nichole	Pitzen	VP - People and Places
Ryan	Fong	CFO

# **MENTORS**

Each mentor has a minimum of 3 years practical experience in the subject area assigned to.

N	Ientor Name	Program
AJ	Sanchez	Data Science Career Track
Srdjan	Santic	Data Science Career Track
Shmuel	Naaman	Data Science Career Track
Srdjan	Santic	Machine Learning Engineering Career Track
Nischal	Harohalli Padmanabha	Data Science Career Track
Neal	Fultz	Data Science Career Track
Max	Sop	Data Science Career Track
Hobson	Lane	Data Science Career Track
Praneeth	Vepakomma	Data Science Career Track
Jeff	Ryan	Data Science Career Track
Ben	Bell	Data Science Career Track
Preetjot	Singh	Data Science Career Track
Liang	Kuang	Data Science Career Track
Lucas	Allen	Data Science Career Track

Dr. Stylianos	Kampakis	Data Science Career Track
Kevin	Glynn	Data Science Career Track
Abhishek	Sharma	Data Science Career Track
Varun	Bhatia	Data Science Career Track
Kenneth	Gil-Pasquel	Data Science Career Track
Nik	Skhirtladze	Data Science Career Track
Yadunath	Gupta	Data Science Career Track
Bernard	Chan	Data Science Career Track
Hassan Waqar	Ahmad	Data Science Career Track
Ankur	Agarwal	Data Science Career Track
Karel	Verhoeven	Data Science Career Track
Dipanjan	Sarkar	Data Science Career Track
Ankur	Verma	Data Science Career Track
Zeehasham	Rasheed	Data Science Career Track
Vaughn	DiMarco	Data Science Career Track
Giovanni	Bruner	Data Science Career Track
Tony	Paek	Data Science Career Track
Tony David	Paek Yakobovitch	Data Science Career Track Data Science Career Track
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David	Yakobovitch	Data Science Career Track
David Jeff	Yakobovitch Hevrin	Data Science Career Track Data Science Career Track
David Jeff Jeremy	Yakobovitch Hevrin Cunningham	Data Science Career Track Data Science Career Track Data Science Career Track
David Jeff Jeremy Nathan	Yakobovitch Hevrin Cunningham Sutton	Data Science Career Track Data Science Career Track Data Science Career Track Data Science Career Track
David Jeff Jeremy Nathan Ricardo D.	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko Blake	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac Arensdorf	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko Blake Andy	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac Arensdorf Cash	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko Blake Andy Raghunandan	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac Arensdorf Cash Patthar	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko Blake Andy Raghunandan Rahul	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac Arensdorf Cash Patthar Sagrolikar	Data Science Career Track
David Jeff Jeremy Nathan Ricardo D. Tuhin Branko Blake Andy Raghunandan Rahul Andrew	Yakobovitch Hevrin Cunningham Sutton Alanis-Tamez Sharma Kovac Arensdorf Cash Patthar Sagrolikar Brooks	Data Science Career Track

Harsh Singh Data Science Career Track
Ken Cavagnolo Data Science Career Track
Michael Chen Data Science Career Track
Kevin Ding Data Science Career Track

Dipanjan Sarkar Machine Learning Engineering Career Track
Jeremy Cunningham Machine Learning Engineering Career Track
Dat Tran Machine Learning Engineering Career Track
Guy Maskall Machine Learning Engineering Career Track
Artem Yankov Machine Learning Engineering Career Track

Guy Maskall Data Science Career Track

Amanbir Singh Data Science Career Track Prep
Branko Kovac Data Science Career Track Prep
Nemanja Radojkovi fá Data Science Career Track Prep

Hassan Waqar Ahmad Machine Learning Engineering Career Track
David Yakobovitch Machine Learning Engineering Career Track
Sébastien Arnaud Machine Learning Engineering Career Track

Shmuel Naaman Data Science Career Track Prep Shubhabrata Roy Data Science Career Track Prep

Ricardo D. Alanis-Tamez Machine Learning Engineering Career Track

Wayne Ang Data Science Career Track

Savin Goyal Machine Learning Engineering Career Track

Jeff Hevrin Machine Learning Engineering Career Track

Dhiraj Kumar Machine Learning Engineering Career Track

YUNNA WEI Data Science Career Track

Rajtilak Indrajit Data Science Career Track Prep

NadavRindlerData Science Career TrackAlisonCossetteData Science Career Track

Urvesh Patel Machine Learning Engineering Career Track

Ana-Maria Mocanu Data Science Career Track

Semih Yagcioglu Machine Learning Engineering Career Track
Douglas Sherk Machine Learning Engineering Career Track
Rahim Samei Machine Learning Engineering Career Track

Rafael Castillo Data Science Career Track

Biswanath Halder Machine Learning Engineering Career Track

prasad seemakurthi Data Science Career Track

Bikash Agrawal Machine Learning Engineering Career Track

Selam Woldetsadick Machine Learning Engineering Career Track

Ajay ohri Data Science Career Track Prep Coetzee van Staden Data Science Career Track Prep

Mukesh Mithrakumar Data Science Career Track

Mukesh Mithrakumar Data Science Career Track Prep
Nishant Gupta Data Science Career Track Prep

Logesh Kumar Umapathi Machine Learning Engineering Career Track
Rajib Biswas Machine Learning Engineering Career Track
Helmut Neher Machine Learning Engineering Career Track
Amal Feriani Machine Learning Engineering Career Track

Ajith Patnaik Data Science Career Track Prep
Wayne Ang Data Analytics Career Track
Paras Doshi Data Analytics Career Track

Michał fÜwiok Data Analytics Career Track

Eric Hamers Data Science Career Track Prep
Alara Dirik Data Science Career Track Prep

Zach Wilkins Data Analytics Career Track
Erik Loken Data Analytics Career Track

Tony Paek Machine Learning Engineering Career Track
Azadeh Esmaeili Machine Learning Engineering Career Track
Vijay K. Prajapti Machine Learning Engineering Career Track

Chris Young Data Analytics Career Track

Aurel Cami Data Science Career Track Prep

Ajith Patnaik Data Science Career Track
Sean Lucas Data Analytics Career Track
Laib Kaplan Data Analytics Career Track
Chris Hui Data Analytics Career Track

Blake Arensdorf Data Science Career Track Prep

Devin Cavagnaro Data Analytics Career Track

Zaal Dzindzibadze Machine Learning Engineering Career Track
Reza Sadoddin Machine Learning Engineering Career Track

Andrew Olton Data Analytics Career Track

Zuraiz Uddin Machine Learning Engineering Career Track

MaxSopData Science Career Track PrepBenBellData Science Career Track Prep

Rahul Gupta Machine Learning Engineering Career Track

Andrea Constantinof Data Science Career Track Prep

Jarus Singh Data Science Career Track Prep

Mike Badescu Data Science Career Track
Nishant Gupta Data Science Career Track

Dhiraj Khanna Data Science Career Track Prep

Dhiraj Khanna Data Science Career Track

Mohammed Zakaria Data Science Career Track Prep
Wayne Ang Data Science Career Track Prep
Alex Rutherford Data Science Career Track Prep
Tobias Zwingmann Data Science Career Track Prep

Serena Peruzzo Data Science Career Track

Girish Gore Machine Learning Engineering Career Track
Sai Kumar Arava Machine Learning Engineering Career Track

Nick Zizos Data Analytics Career Track

Shwathi Soni Machine Learning Engineering Career Track

Santiago Viquez Data Analytics Career Track

Adam Adler Data Science Career Track Prep

Ana Santos UI/UX Design Career Track Shraddha UI/UX Design Career Track Swaroop Angelo Lo Presti UI/UX Design Career Track Nathaniel M Chen UI/UX Design Career Track Ciarda Henderson UI/UX Design Career Track John Maier UI/UX Design Career Track Pike Anne UI/UX Design Career Track Ali Rushdan Tariq UI/UX Design Career Track

Alex Souza UI/UX Design Career Track

Nemanja Radojkovi fá Machine Learning Engineering Career Track

Sashank Musti Data Analytics Career Track

Eleanor Thomas Data Analytics Career Track

Todd Lewis UI/UX Design Career Track

Jay Trainer UI/UX Design Career Track

Han Rhyu UI/UX Design Career Track

Heiko Sacher UI/UX Design Career Track

JP Costanzo UI/UX Design Career Track

Vee Mateus UI/UX Design Career Track

Sandra Vickery UI/UX Design Career Track

Spencer Moon Data Analytics Career Track

Radu Vucea UI/UX Design Career Track

Geoff Courbis UI/UX Design Career Track

Arul Bharathi Data Analytics Career Track

Roxana Cociorba UI/UX Design Career Track

Mariam Elshebokshey UI/UX Design Career Track

Earl Friedberg UI/UX Design Career Track

Josette Desulme UI/UX Design Career Track

Lizhi Dong Data Analytics Career Track

Karim Lahrichi Data Analytics Career Track

Chris Esposo Data Science Career Track

Vanessa Costa-Massimo UI/UX Design Career Track

Farid Sukurov UI/UX Design Career Track

Tyler Pratt UI/UX Design Career Track

Veronica Hsieh Data Analytics Career Track

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Todd Chambers UI/UX Design Career Track

Ramasubramania

Karthik n Data Science Career Track Prep

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Said	Calderon	UI/UX Design Career Track
John	Sukup	Data Science Career Track
Rafal	Jankos	UI/UX Design Career Track
Elsa	Но	UI/UX Design Career Track
Toly	Gins	Data Analytics Career Track
Rain	Lieberman	UI/UX Design Career Track
Benjamin Kai	Tong	UI/UX Design Career Track

Siim Schults Software Engineering Career Track

Daniel Data Analytics Career Track Hong Sebastian Tory-Pratt UI/UX Design Career Track David G√oiza Caicedo UI/UX Design Career Track Lauren McElroy UI/UX Design Career Track Meg UI/UX Design Career Track Clayton Solomon Antony Data Analytics Career Track Mukhethwa Sharon Shandukani Data Analytics Career Track Zeehasham Rasheed Data Analytics Career Track

Matheus Jacob Paulin Software Engineering Career Track

UI/UX Design Career Track

Shoumik Goswami Data Analytics Career Track
Osama Ghazal UI/UX Design Career Track
Anabel Leva UI/UX Design Career Track
Karen Ko UI/UX Design Career Track

Caloras

Jamison

Bhavya Bhushan Software Engineering Career Track

Leon Hui UI/UX Design Career Track

Archana Jain Software Engineering Career Track

Gaurav Laddha Data Analytics Career Track

sharath Prabhal Software Engineering Career Track

Mark Peterson UI/UX Design Career Track

John Newton Software Engineering Career Track

Diptesh Paul Data Analytics Career Track
Tony Baby Data Analytics Career Track
Joseph Sudibyo Data Analytics Career Track

Gabriel Berard UI/UX Design Career Track
Rahul Sagrolikar Data Analytics Career Track
Mackenzie Cowles Data Analytics Career Track
Alexander Grun Data Analytics Career Track
Daniel Wu Data Science Career Track

Daniel Wu Machine Learning Engineering Career Track

Nogués Aida UI/UX Design Career Track DiMarco Vaughn Data Analytics Career Track Sladana Kozar UI/UX Design Career Track Seth Sokol UI/UX Design Career Track Vitor Pinho UI/UX Design Career Track Leanne Kawahigashi UI/UX Design Career Track

Vitor Freitas Software Engineering Career Track Prep

Przemyslaw Baran Data Analytics Career Track Reza Sadoddin Data Science Career Track

Jonathan Root Software Engineering Career Track Prep ankitjavalkar J Software Engineering Career Track Prep

Ramasubramania

Karthik
 Data Analytics Career Track
 David
 Lara-Arango
 Data Analytics Career Track
 Tejas
 Pandey
 Data Analytics Career Track
 Rohit
 Jain
 Data Analytics Career Track
 Débora
 Edelberg
 UI/UX Design Career Track

James (Jim) Rudolf Software Engineering Career Track Prep

James (Jim) Rudolf Software Engineering Career Track

Xu (Sue) Ashton Data Analytics Career Track

Andrew MacDonald Software Engineering Career Track Prep

Samir Nasser Eddine Software Engineering Career Track

Sam Johnson Software Engineering Career Track Prep

Sam Johnson Software Engineering Career Track

Jesse Perez UI/UX Design Career Track
Edoe Balint Data Analytics Career Track

Marina Gulakova Software Engineering Career Track Prep

Anthony Gras **Data Analytics Career Track** 

Ashwin Kumar Kannan Machine Learning Engineering Career Track

Oscar Cardoso Software Engineering Career Track Prep

Hemanth Kattamuri Data Analytics Career Track

Alexander Turok Software Engineering Career Track

Data Analytics Career Track Rahul Kumar Kanupria Sanu **Data Analytics Career Track** Brandon Groce UI/UX Design Career Track

Ginnaliya

Software Engineering Career Track Lahiru Gamathige Jason **Bowling** Software Engineering Career Track Software Engineering Career Track Candice Haddad Mauro Chojrin Software Engineering Career Track

Anna Shulyak Data Analytics Career Track

Data Science Career Track Prep Udeme Udofia

Nwede Farye Software Engineering Career Track Peter Nsaka Software Engineering Career Track Bennett

Zachary Software Engineering Career Track

Hasin Ahmed Data Analytics Career Track Danny Ledger UI/UX Design Career Track **Thomas** UI/UX Design Career Track Murray

Sonia Rose Mary Karungi Software Engineering Career Track

Akshay Jhawar Data Analytics Career Track

Don Omondi Software Engineering Career Track

Youssuf ElKalay Software Engineering Career Track Prep

Nathan Kuo Software Engineering Career Track Alan Frank Software Engineering Career Track

Ankush Kotriwal Software Engineering Career Track Prep

Natasha Hampshire UI/UX Design Career Track

Rehan Shahid Software Engineering Career Track Prep

Mohit Bhatia Data Analytics Career Track Bob Newstadt **Data Analytics Career Track** 

Vadim Grayfer Software Engineering Career Track Prep

Gerrells David UI/UX Design Career Track trivedi Data Science Career Track anurag Adam Adler Data Science Career Track Vijay Viswanathan Data Analytics Career Track Noor Hussain Data Analytics Career Track Baitleman UI/UX Design Career Track Levi Lucas Mosele UI/UX Design Career Track Luke Stringer Data Analytics Career Track Sharath Jarugumilli Data Analytics Career Track Jared UI/UX Design Career Track Knapp

Meha Jain Software Engineering Career Track Prep

Dida Marinova UI/UX Design Career Track
Clara Marquardt Data Science Career Track
Agustin Dana UI/UX Design Career Track
Vanessa Osorio UI/UX Design Career Track

Adam G. Software Engineering Career Track Prep
Calvin Cole Software Engineering Career Track Prep
Jonathan Keane Software Engineering Career Track Prep
Mikael Araya Mengistu Software Engineering Career Track Prep

John Moore Software Engineering Career Track
Paul Kim Software Engineering Career Track

tiffany stokley Software Engineering Career Track Prep

Arun Goyal Data Analytics Career Track Prosperati Pasquale Data Analytics Career Track Werner Griesel UI/UX Design Career Track Carlton Devereaux UI/UX Design Career Track Shwathi Soni Data Science Career Track Eduardo Data Analytics Career Track Ponce

Ron Goodwin Software Engineering Career Track

Laura Trouiller UI/UX Design Career Track
Karla Fernandes UI/UX Design Career Track
Josie Oria Data Analytics Career Track

Renie Siqueira Software Engineering Career Track Prep

Thomas Proust Software Engineering Career Track
Guy Maskall Data Science Career Track Prep
Roy Zheng Software Engineering Career Track

David Lara-Arango Data Science Career Track Prep
Anade Davis Data Science Career Track Prep

Elissa Thomas Software Engineering Career Track Prep

Rahul Kumar Data Science Career Track Prep
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