

Full-Stack Engineer PRO_

Resume

Path Progress

43%



[Reset Progress](#)

Path Description

A full-stack engineer can get a project done from start to finish. This Career Path will start with the front-end, move on to the back-end, then teach you how to connect the two.

Details

Earn a certificate of completion

6 months to complete in total

Beginner

1. Welcome to the Full-Stack Engineer Path



Getting Started



2. Getting Started with Full-Stack Engineering

- ✓ **Introduction: Getting Started with Full-Stack Engineering** ✓
 - ✓ **Introduction to Software Engineering** ✓
 - ✓ **Review: Getting Started with Full-Stack Engineering** ✓
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3. JavaScript Syntax, Part I

- ✓ **Introduction: JavaScript Syntax, Part I** ✓
- ✓ **Introduction to Programming with JavaScript** ✓
- ✓ **Learn JavaScript Syntax: Introduction** ✓
[Cheatsheet](#) | [Practice Pack](#)
- ✓ **Learn JavaScript Syntax: Conditionals** ✓
[Cheatsheet](#) | [Practice Pack](#)
- ✓ **Learn JavaScript Syntax: Functions** ✓

[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn JavaScript Syntax: Scope** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Practice JavaScript Syntax: Variables, Data Types, Conditionals, Functions** ∨

 - ✓ **Number Guesser** ∨

 - ✓ **Review: JavaScript Syntax, Part I** ∨
-

4. JavaScript Syntax, Part II

- ✓ **Introduction: JavaScript Syntax, Part II** ∨

- ✓ **Learn JavaScript Syntax: Arrays** ∨
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn JavaScript Syntax: Loops** ∨
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn JavaScript Syntax: Objects** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Learn JavaScript Syntax: Iterators** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Learn JavaScript Syntax: Errors and Debugging** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Pair-Programming: JavaScript Syntax Part I and II** ∨

 - ✓ **Practice JavaScript Syntax: Arrays, Loops, Objects, Iterators** ∨

 - ✓ **Credit Card Checker** ∨

 - ✓ **Mysterious Organism** ∨

 - ✓ **Review: JavaScript Syntax, Part II** ∨
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5. Setting Up Your Dev Environment

- ✓ **Introduction: Setting Up Your Dev Environment** ∨

 - ✓ **Command Line for Building Websites** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Text Editors** ∨

 - ✓ **Running JavaScript** ∨

 - ✓ **Review: Setting Up Your Dev Environment** ∨
-

6. Git and Github, Part I

- ✓ **Introduction: Learn Git, Part I** ∨

- ✓ **Introduction to Git** ∨
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **How to Backtrack in Git** ∨
[Cheatsheet](#) | [Practice Pack](#)

✓ **Introduction to GitHub** ✓

✓ **Learn Markdown** ✓

✓ **Review: Git and Github, Part I** ✓

7. JavaScript Syntax Portfolio Project

✓ **Group Project: Mixed Messages** ✓

✓ **Mixed Messages** ✓

8. Web Development Fundamentals

✓ **Introduction: Web Development Fundamentals** ✓

✓ **What is the Internet?** ✓

✓ **What is Web Development?** ✓

- ✓ **What is Web Development?** ▼

- ✓ **What is Front-End Development?** ▼

- ✓ **Learn HTML: Elements** ▼
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn HTML: Structure** ▼
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn HTML: Tables** ▼
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Semantic HTML** ▼
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn CSS: Selectors and Visual Rules** ▼
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Developing with CSS** ▼

- ✓ **Semantic CSS** ▼

- ✓ **Build Your Own Cheat Sheet** ✓
 - ✓ **Review: Intro to Web Development Fundamentals** ✓
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9. Bringing Your Site Online

- ✓ **Introduction: Bringing Your Site Online** ✓
- ✓ **Wireframing** ✓
- ✓ **Deploy a Site with GitHub Pages** ✓
- ✓ **Web Hosting** ✓
- ✓ **Code Review: HTML/CSS Websites** ✓
- ✓ **Off-Platform: Excursion Project** ✓

✓ **Review: Bringing Your Site Online** ✓

10. Improved Styling with CSS

✓ **Introduction: Improved Styling of CSS** ✓

✓ **Learn CSS: Colors** ✓
[Cheatsheet](#) | [Practice Pack](#)

✓ **Learn CSS: Typography** ✓
[Cheatsheet](#) | [Practice Pack](#)

✓ **Learn CSS: The Box Model** ✓
[Cheatsheet](#) | [Practice Pack](#)

✓ **Learn CSS: Display and Positioning** ✓
[Cheatsheet](#) | [Practice Pack](#)

✓ **Build A Website Design System** ✓

✓ **Review: Improved Styling of CSS** ✓

11. Building Interactive Websites with JavaScript

- ✓ **Introduction: Building Interactive Websites with JavaScript** ∨

 - ✓ **JavaScript Interactive Websites** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **JavaScript and the DOM** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **DOM Events with JavaScript** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **HTML Forms** ∨
[Cheatsheet](#) | [Practice Pack](#)

 - ✓ **Review: Building Interactive Websites with JavaScript** ∨
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12. Making a Website Responsive

- ✓ **Introduction: Making a Website Responsive** ✓

- ✓ **Learn Responsive Design** ✓
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Layout with Flexbox** ✓
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Learn CSS: Documentation and Debugging** ✓

- ✓ **Learn Responsive Design: Grids and Spacing** ✓

- ✓ **Learn CSS: Grid** ✓
[Cheatsheet](#) | [Practice Pack](#)

- ✓ **Company Home Page** ✓

- ✓ **Responsive Club Website** ✓

- ✓ **Review: Making a Website Responsive** ✓

13. Making a Website Accessible

✓ **Introduction: Making a Website Accessible** ^

See what's covered in the Making a Website Accessible unit.

✓ Info Introduction: Making a Website Accessible

Resume →

✓ **Learn Web Accessibility** v

✓ **Review: Making a Website Accessible** v

14. HTML, CSS, and JS Portfolio Project

✓ **Personal Portfolio Website** v

15. JavaScript Syntax, Part III

✓ **Introduction: JavaScript Syntax, Part III** v

✓ **Learn JavaScript Syntax: Classes** v

[Cheatsheet](#) | [Practice Pack](#)



Learn JavaScript Syntax: Modules

4 articles, 1 quiz, 1 doc, 2 projects



Learn JavaScript Syntax: Error Handling

[Cheatsheet](#) | [Practice Pack](#)



Pair-Programming: JavaScript Syntax, Part III



Practice JavaScript Syntax: Classes



Find Your Hat

[Cheatsheet](#)



Review: JavaScript Syntax, Part III



16. Test Driven Development with JavaScript



Introduction: TDD Fundamentals



Why Test?



- ✓ **Write Good Tests with Mocha** ▼
 - ✓ **Learn TDD with Mocha** ▼
 - ✓ **Review: TDD Fundamentals** ▼
-

17. Async JavaScript and HTTP Requests

- ✓ **Introduction: Async JavaScript and HTTP Requests** ▼
- ✓ **Basics of Asynchronous JavaScript** ▼
- ✓ **Learn JavaScript Syntax: Promises** ▼
[Cheatsheet](#) | [Practice Pack](#)
- ✓ **Learn JavaScript Syntax: Async-Await** ▼
[Cheatsheet](#) | [Practice Pack](#)
- ✓ **APIs and HTTP Requests** ▼

Learn JavaScript: Requests

2 lessons, 2 quizzes, 1 reading, 3 articles, 1 project



Review: Async JavaScript and HTTP Requests

1 info



18. Web Apps

✓ Introduction: Web Apps

✓ What is a Web App?

✓ Review: Web Apps

19. React, Part I

✓ Introduction: React, Part I

✓ Review: ES6 Syntax

✓ **Review: Functional JavaScript** ✓

✓ **Introduction to React.js** ✓

✓ **The Virtual DOM** ✓



JSX

2 lessons, 1 quiz, 1 project

[Cheatsheet](#) | [Practice Pack](#)



React Components

2 lessons, 1 quiz, 1 project, 1 article, 1 doc



[Cheatsheet](#) | [Practice Pack](#)







✓ **Review: React, Part I** ✓



20. React, Part II



✓ **Introduction: React, Part II** ✓


-  **Components and Props** 
[Cheatsheet](#) | [Practice Pack](#)


-  **React State** 
1 lesson, 1 quiz, 1 project
[Cheatsheet](#) | [Practice Pack](#)

-  **React Development Tools** 

-  **Stateless Components from Stateful Components** 
3 lessons, 1 quiz, 1 project
[Cheatsheet](#) | [Practice Pack](#)

-  **Lifecycle Methods** 
1 lesson, 1 project, 1 quiz
[Cheatsheet](#) | [Practice Pack](#)

- Jammming** 
2 projects

- Deploy a React Application With Netlify** 
3 articles, 1 info

Function Components and Hooks



3 lessons, 1 project, 1 quiz

Code Review: React



1 info

Advanced React



4 lessons, 1 project, 1 quiz

React Router



2 docs, 1 article

Learn React Testing with Jest



3 articles, 2 docs, 1 tutorial

Code Review: React



1 info

Appointment Planner



1 project

Review React Part II

Review: React, Part II

1 info

21. Redux**Introduction: Redux**

1 info

Core Concepts in Redux

1 lesson, 1 project, 1 quiz

Core Redux API

2 lessons, 1 quiz, 1 project, 1 article

Connect to React with React Redux

1 lesson, 1 quiz, 1 project

Refactoring with Redux Toolkit

1 lesson, 1 quiz, 1 project, 1 video

Async Actions with Middleware and Thunks

2 lessons, 1 quiz, 1 project

Testing Redux

4 articles, 2 tutorials



Code Review: Redux

1 info



Flashcards

1 project



Review: Redux

1 info



22. Git and GitHub, Part II

Introduction: Git and Github, Part II

1 info



Git Branching

1 lesson, 2 projects, 1 quiz



Git Teamwork

1 lesson, 2 projects, 1 quiz



Collaborating with GitHub

4 articles, 1 tutorial



Project Management and Workflows on GitHub

1 doc, 3 articles



Review: Git and GitHub, Part II

1 info



23. React and Redux Portfolio Project

Group Project: React/Redux

1 info



Reddit Client

1 portfolio



24. Basics of Back-End Development

Introduction: Basics of Back-End Development

1 info



What is a Back-End?



1 video, 1 lesson, 1 article

What is a Server?



1 resource, 3 articles

Introduction to RESTful APIs



3 articles

Review: Basics of Back-End Development



1 info

25. Build a Back-End with Node/Express.js

Introduction: Build a Back-End with Node/Express.js



1 info

Learn Node.js



1 lesson, 1 tutorial, 1 doc, 1 resource, 1 quiz

Introduction to Express



2 articles, 1 tutorial, 1 doc

Learn Express: Routes

3 lessons, 1 doc, 1 article, 1 tutorial, 1 quiz



Challenge Project: Quote API

1 project



Learn Express: Middleware

2 articles, 3 lessons, 3 docs, 1 quiz



Documenting APIs with Swagger

1 article, 3 tutorials



API Project: Boss Machine

2 infos



Review: Build a Back-End with Node/Express.js

1 info



26. Back-End and Feature Testing

Introduction: Back-End and Feature Testing

1 info



Outside-in TDD

2 articles



Learn Feature Testing with TDD

1 article, 1 lesson, 1 project, 1 doc, 1 quiz



Learn Server Testing with TDD

2 lessons, 2 docs, 1 tutorial, 2 quizzes, 1 project



Review: Back-End and Feature Testing

1 info



27. SQL for Back-End Development

✓ **Introduction: SQL for Back-End Development**

✓ **Introduction to SQL and Relational Databases in Web Development**

✓ **SQL: Creating, Updating, and Deleting Data**
[Cheatsheet](#) | [Practice Pack](#)



SQL Queries

2 lessons, 1 article, 1 project, 1 quiz

[Cheatsheet](#) | [Practice Pack](#)



Performing SQL Calculations

2 lessons, 1 project, 1 quiz



Working with Multiple SQL Tables

2 lessons, 1 tutorial, 1 project, 1 quiz



Pair-Programming: SQL Syntax

1 info



Practice SQL Syntax

2 resources



Review: SQL for Back-End Development

1 info



28. PostgreSQL Database

Introduction: PostgreSQL Database



1 info

Introduction to Databases



1 resource, 2 articles

Introduction to PostgreSQL



2 articles

Setting up PostgreSQL



1 article, 2 resources, 1 info

PostgreSQL Basics



1 tutorial, 1 doc, 1 resource

Review: PostgreSQL Database



1 info

29. Designing Relational Databases

Introduction: Designing Relational Databases



1 info

Introduction to Database Design



3 articles, 1 resource

Designing a Database



3 lessons, 1 article, 1 project, 1 quiz

Designing A Database Schema Off Platform Project



1 info

Entity Relationship Diagrams



3 articles, 1 resource

Database Normalization



1 resource, 1 lesson, 1 article, 1 quiz, 1 project

Review: Designing Relational Databases



1 info

30. Advanced PostgreSQL

Introduction: Advanced PostgreSQL



1 info

ACID

1 resource, 2 articles



Postgres Database Performance

2 lessons, 2 projects, 2 quizzes, 3 articles



Postgres Database Tuning and Benchmarking

2 resources, 2 articles, 1 doc



Database Maintenance and Monitoring Software

2 articles, 2 resources



Review: Advanced PostgreSQL

1 info



31. Back-End Portfolio Project

Group Project: Back-End

1 info



E-Commerce App (REST API)



1 portfolio

32. Connecting Front-End to Back-End

Introduction: Connecting Front-End to Back-End



1 info

Client-Side Rendering



5 articles

Server-Side Rendering



3 articles, 1 tutorial

How to Structure Your Apps



4 articles, 3 resources

Server-Side API Calls to External APIs



2 tutorials, 2 articles

The Server Can Do More: Server-Side Use Cases



5 tutorials

Review: Connecting Front-End to Back-End



1 info

33. Adding a PostgreSQL Database

Introduction: Adding a PostgreSQL Database



1 info

PostgreSQL with Node and Express



2 tutorials, 1 doc, 1 resource

Deploying a PERN App to Heroku



1 tutorial, 2 docs

Using an ORM with Sequelize



1 article, 1 tutorial, 1 doc

Query Builders and Data Seeding



2 tutorials, 1 doc, 1 resource

Review: Adding a PostgreSQL Database



1 info

34. Security, Authentication, and Authorization

Introduction: Security, Authentication, and Authorization



1 info

Introduction to Web Security



1 resource, 2 articles

Introduction to Authentication/Authorization



1 resource, 1 article, 1 doc, 1 tutorial

OAuth 2.0



2 articles, 1 tutorial

Passport.js



1 tutorial, 1 doc, 2 articles

Authentication/Authorization in Postgres



1 tutorial, 1 doc, 1 article

Roles in Postgres



1 resource, 1 doc, 2 articles, 1 tutorial

Sessions & Cookies



1 resource, 3 articles, 1 tutorial

JWTs



1 resource, 3 articles, 1 tutorial

Protecting Data in Transit



2 resources, 2 articles

Protecting Data at Rest



2 articles, 1 tutorial

Secure Collaborative Development



2 articles, 2 docs

Browser Security



1 article, 2 docs, 1 tutorial

Cross-Site Request Forgery (CSRF)



1 resource, 3 articles

Cross-Site Scripting (XSS)

2 resources, 4 articles



SQL Injection

1 resource, 4 articles



Data Validation & Sanitization

1 resource, 2 articles, 1 tutorial



Review: Security, Authentication, and Authorization

1 info



35. Advanced Concepts in TDD

Introduction: Advanced Concepts in TDD

1 info



Advanced Testing: Mocking

3 articles, 1 doc



Advanced Testing: Browser Automation

1 doc, 2 articles



Review: Advanced Concepts in TDD



1 info

36. Full-Stack Portfolio Project

Group Project: Full-Stack



1 info

E-Commerce App (Client)



1 portfolio

37. What To Expect in a Technical Interview

Introduction: What to Expect in a Technical Interview



1 info

Intro to Tech Interviews



4 articles

Review: What to Expect in a Technical Interview



1 info

38. Linear Data Structures

Introduction: Linear Data Structures

1 info



Intro to Data Structures

2 articles



Nodes

1 info, 2 lessons, 2 quizzes



Singly Linked Lists

4 infos, 2 lessons, 2 quizzes, 1 video, 2 articles



Doubly Linked Lists

4 infos, 2 lessons, 2 quizzes, 1 video



Queues

3 infos, 2 lessons, 2 quizzes, 1 video



Stacks

3 infos, 2 lessons, 2 quizzes, 1 project, 1 video



Review: Linear Data Structures



1 info

39. Complex Data Structures

Introduction: Complex Data Structures



1 info

Hash Maps



3 infos, 2 lessons, 2 quizzes, 1 video

Trees



1 info, 2 lessons, 2 quizzes

Heaps



3 infos, 2 lessons, 2 quizzes, 1 video

Graphs



1 info, 2 lessons, 2 quizzes

Review: Complex Data Structures



1 info

40. Algorithms

Introduction: Algorithms

1 info



Recursion

1 info, 3 lessons, 2 quizzes



Asymptotic Notation

3 articles, 1 lesson, 2 quizzes



Bubble Sort

1 info, 2 lessons, 2 quizzes



Merge Sort

2 lessons, 2 quizzes



Quicksort

2 lessons, 2 quizzes



Review: Algorithms



Review: Algorithms

1 info

41. Search & Graph Search Algorithms**Introduction: Search & Graph Search Algorithms**

1 info

Binary Search and Search Trees

1 info, 3 lessons, 1 quiz

Graph Traversals

1 info, 2 lessons, 2 quizzes

Review: Search & Graph Search Algorithms

1 info

codecademy / PRO

Introduction: Interview Skills

1 info

Technical Interviews: Whiteboarding

1 lesson, 1 quiz, 1 reading

1 lesson, 1 quiz, 1 reading

Code Review: Interview Skills



1 info

JavaScript Algorithm Practice



5 articles, 1 info

Soft Skills



2 articles, 1 reading

Real World Interview Problems



4 videos

Review: Interview Skills



1 info

43. Final Portfolio Project

Group Project: Final Project



1 info

Final PERN App



Full-Stack App



1 portfolio

44. Next Steps in Your Full-Stack Engineer Journey

Next Steps



2 infos