



Ultimate QA

BEST RESOURCES TO LEARN SELENIUM WEBDRIVER



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Introduction

When I first started doing test automation many years ago, I had a tough time finding good resources to help me improve my skills.

I found that there were many bad resources, many mediocre ones, and very few that were actually helpful.

Therefore, when I found good resources, I saved them. I still do to this today.

Below is a list of the best automation resources that I have gathered over the years. I hope that they are as helpful for you as they are to me.



1. [Selenium 2 WebDriver Basics with Java](#)

Alan Richardson

Selenium WebDriver | Java | \$229

There are a ton of Selenium WebDriver courses out there. Most of them are complete garbage, but Alan's course is just awesome. He will teach you many different aspects of Selenium WebDriver such as:

- How to handle iFrames
- How to write tests
- How to perform user interactions
- How to invoke JavaScript
- How to work with tabs
- And so much more, from basic to advanced

2. [Complete Selenium WebDriver with C# – Build A Framework](#)

Nikolay Advolodkin

Selenium WebDriver | C# | Visual Studio | MS Test | \$19

Yes, this is a shameless plug for my course, but in all honesty, this is a wonderful course. It is the #2 rated Selenium course on Udemy and has over four thousand students. Some of the topics that you will learn are:

- Everything you need to get started with Selenium WebDriver
- How to create your first automation framework from scratch
- The Page Object Model, the most effective way to create automation testing frameworks
- C# for beginners to make you efficient at coding frameworks
- Visual Studio and MSTest framework
- And much more...

3. [Selenium Guidebook](#)

Dave Haeffner

Selenium WebDriver | C# | Java | Ruby | Python | JavaScript | \$249

This isn't purely just a Selenium WebDriver video course. This is actually a collection of a bunch of great resources from Dave. You get video tutorials, an e-book, and cheat sheets. I bought it myself and am definitely satisfied. Here you can learn:

- Local configurations
- Cloud configurations
- How to write maintainable tests
- And much more

4. [Selenium WebDriver, SpecFlow, and BDD](#)

Pluralsight

Selenium WebDriver | C# | BDD | \$29/mo

This is an excellent course on PluralSight that will teach you how to do Behavior Driven Development using SpecFlow framework. Jason does an excellent job teaching the relevant topics for BDD. It's actually the only BDD course that I have seen for the SpecFlow framework. Some things that you can learn are:

- SpecFlow
- Page Objects in Selenium
- Behavior Driven Development concepts

5. [Selenium WebDriver Implicit and Explicit Waits](#)

Selenium WebDriver | C# | Visual Studio | \$Free

Struggling with flaky tests? This is a free Selenium WebDriver course that you can use to seriously improve the stability of your automated functional tests. Here are some topics that you will learn:

- Learn the problems that can occur as a result of improper synchronization
- Learn how to use Selenium WebDriver explicit waits
- Master Selenium WebDriver implicit waits
- Comprehend how to use all of the different types of waits during appropriate situations

Did you know that there is an abundance of incredible code out in the world that has already been developed? You are not the first person to try and build an Enterprise-level test automation framework. People have been doing this for decades.

What follows here is a list of all the automation frameworks that I have found through my years of development. Most of it is Selenium WebDriver since it's what I am currently using. Take a look at everything to gather some ideas for your efforts.

1. [Selenium WebDriver Framework – Ultimate QA](#)

Selenium WebDriver | C# | Page Object Model

This is my open source framework that I teach through my Complete Selenium WebDriver Course. It is lightweight, easy to use, and is based around the Page Object Model for easy maintenance. [Fork it or download it](#) to get some new ideas for your future framework.

2. [Automate The Planet Frameworks](#)

Anton Angelov

Selenium WebDriver | Test Studio | C#

Anton has a ton of useful code that you can look at. He applies different design patterns to his code to show you how it would look. For example, you can see how to use the Strategy Design Pattern, the Facade Design Pattern, the Page Object Model, and the Advanced Page Object Model. You can cycle through it and decide what you want to reuse.

3. [SpecFlow BDD Automation](#)

Selenium WebDriver | BDD | C# | Acceptance Testing

SpecFlow is one of the few C# BDD frameworks out there, which automatically makes it a highly desirable candidate. This framework helps you to build acceptance tests using business readable specifications. Therefore, these tests are readable by the developers, testers, and business personnel. In theory, these tests can replace requirements as they serve as living documentation.

4. [Golem Automated Testing Framework](#)

Selenium WebDriver | GUI Testing | RESTful Testing | SauceLabs

This framework is one of the most feature-rich frameworks that I have ever seen in the industry. It helps you to build GUI tests, RESTful tests, and tests against Windows applications, running all of this locally or in the cloud. I spent many hours looking at this code and learned a lot.

The creator has some excellent strategies for making very readable tests. Furthermore, he creates great logs, screenshots, and video recordings to help debug the failed tests. Sadly, I cannot get it to run consistently, but it's a great place to start building from.

5. [Gauge](#)

ThoughtWorks | *Test Automation*

Gauge is a test automation framework designed by the guys that created Selenium WebDriver. Although I haven't explored it myself, it does seem interesting since it was created by the Selenium guys. They do seem to create resources that change the world. It's a resource I will look at in the future, and you should as well.

6. [RedwoodHQ](#)

Test Automation | Keyword Driven | C# | Java | Python

This is an open source keyword-driven framework that allows users to build keyword-driven actions in order to create their tests through a simple user interface. They have integration capabilities with source control, continuous integration, and many others. I'm not a big fan of keyword-driven frameworks, but if they are your cup of tea, then you should look at RedwoodHQ. Here are some great links to get you started:

- [Quick Start Guide](#)
- [Documentation](#)
- [Release Notes](#)

7. [Serenity](#)

Automation Framework | BDD | Java

Serenity is a BDD framework that works with Java and Selenium WebDriver. Serenity also offers functionality such as:

- Providing WebDriver management
- Taking screenshots
- Running tests in parallel
- Facilitating Jira integration

I have not personally used it, but I know some people who do and they all say fantastic things about Serenity. It makes me a bit jealous that it doesn't integrate with my Visual Studio.

8. [BDD Selenium Framework](#)

Alister Scott

Selenium WebDriver | BDD | Specflow | C#

If you are looking to build Behavior Driven Development tests using Selenium WebDriver and C#, then Alister has the code that you want to see. He utilized [SpecFlow's](#) framework to run his tests. I always recommend that you look at all the code you can to acquire knowledge from other individuals.

1. [UltimateQA Practice site](#)

This source is a free place to practice some scenarios like:

- Testing a large, complicated page
- Working with simple HTML elements like buttons
- Filling out forms
- Automating an application that evolves over time

2. [Awful Valentine](#)

Awful Valentine is another free website that I got from a book I read called [Selenium Design Patterns by Dima Kovalenko](#). This website is a simulator of an online store where you can purchase different kinds of items. You can try to automate items such as:

Slow AJAX

- Slow animation
- Third party links
- Credit card transactions
- Online store checkout scenarios

3. [Dave Haeffner's Practice Site](#)

Dave designed an excellent place to practice different kinds of test automation scenarios. Some of the scenarios that you can try to automate include:

- A/B Testing
- Basic Authentication
- File Uploading
- Challenging DOM
- iFrames
- Slow connection behavior
- Dynamic content
- Hovers
- Redirect links

4. [Fake Online Investment Site](#)

This is an online investment website where you can practice different automation techniques like user creation and money transaction validations. I got this website from the book [A Practitioner's Guide to Software Test Design by Lee Copeland](#). Please use the Authorization Code 11111111, and you will be able to register for the site and login to practice your automated software testing.

5. [QTP Tutorial's Test Automation Practice Page](#)

- QTP Tutorial provides a free place to practice different identification techniques such as:
Using html id to interact with your element
- Utilizing html class to interact with your elements
- Filling out different forms
- Practicing signing up for an email list
- Automating login scenarios

6. [PHP Travels](#)

This is an excellent demo travel site that you can use to practice your test automation. They have a front end and a back end for you to automate.

7. [Mercury Tours](#)

This is another fake travel site for test automation. It is not as good as PHP Travels' site. However, if you are looking for variety in practicing with different websites, this will add that extra variety.

8. [Sample E-Commerce Site](#)

This is a really nice fake e-commerce site to practice test automation. If you have a project where you need to practice different flows for online stores, this is the website you want. You can practice:

- Adding items to the cart
- Checking out
- Validating that items have been added

9. [Demoqa](#)

This is a neat little website with simple elements to practice test automation with. It has:

- Draggable elements
- Droppable elements
- Selectable elements
- Sortable elements
- Much more



These are websites that contain a bunch of very useful courses. Some are paid and some are free. Take a look and search for your desired topic.

1. [Udacity](#)

Software Testing | Programming | Git | Free & Paid

This is a great site with very high-quality videos. The videos are recorded, so you can take interactive quizzes based on the content that is drawn on the page during the video. The instructor may ask you to identify the correct solution to a problem, write four answer choices, and then you can interact with the User Interface to select the correct choice. Two of my favorite free courses are [Software Testing](#) and [How To Use Git and Github](#).

2. [Code School](#)

Development Training | C# | Ruby | Python | Git

This is a really sweet website for learning different kinds of programming languages by actually coding your own games. The video editing of these tutorials is excellent, and they are extremely interactive.

- [Try ASP.NET Course](#)

3. [Microsoft Virtual Academy](#)

Development Training | C# | .NET | Free

This is an excellent website from Microsoft. Here you can learn a lot about all of the different Microsoft technologies from excellent and knowledgeable instructors. Some of my favorite courses to improve your automation skills include:

- [Rapidly diagnose and solve application problems in Visual Studio](#)
- [C# Fundamentals](#)
- [Software Development Fundamentals](#)

4. [Coursera](#)

Online University | Free & Paid

Their motto is “Take free online courses from top universities.” Therefore, you can take real college courses online. Most are completely free. The only catch is you actually have to participate in the course because they have hard start dates, homework, and quizzes. Some courses that you can partake in include:

- [Software Security](#)
- [Testing with Agile](#)
- [Mastering the Software Engineering Interview](#)
- [Reviews & Metrics for Software Improvements](#)

5. [Pluralsight](#)

IT Training

This is a topnotch site with some of the best professionals teaching great topics. These professionals include John Sonmez, Aaron Frost, and Scott Allen. You can learn different programming languages like Java, C#, and Python by watching video tutorials. You can also learn automation tools like Selenium WebDriver, Coded UI, NUnit, Visual Studio Test, and much more. All of the video tutorials come with code and notes that you can use in order to enhance your retention rate. Some of my favorite courses include:

- [Automated Business Readable Web Tests with Selenium and SpecFlow](#)
- [Automated Web Testing with Selenium](#)
- [Quick Guide to API Testing with HP's Unified Functional Testing](#)
- [Creating an Automated Testing Framework With Selenium](#)

If you want to master test automation, you must read, as there is a wealth of information in books. I read a bunch of these, and every single one has added an extra weapon to my automation arsenal.

1. [Clean Code: A Handbook of Agile Software Craftsmanship by Robert C. Martin](#)

Although this is not a book specifically for test automation, it's one that every code writer should own. Out of all the books that I have read, this one has caused one of the largest improvements to my functional test automation.



Bob Martin conveys a ton of coding best practices that anyone writing code should implement, even Automation Engineers. Furthermore, Uncle Bob tells the best stories. Some of the topics that are covered include:

- How to write meaningful names
- How to write good functions
- How to handle comments
- How to deal with objects and data structures
- How to do proper error handling
- How to write unit tests

2. [Head First Design Patterns: A Brain-Friendly Guide](#)

It's funny how the books that have had the most impact on my automated functional testing were books on software development. At some point, all Automation Engineers reach a place where automation skills are no longer their Achilles' heel.



Rather, it's a lack of understanding of good Object Oriented design and patterns to deal with common problems faced by all of us.

At one point, I reached such a place in my career. This book has helped me to surpass any impasse by covering fundamental design patterns such as:

- Factory Pattern - excellent for WebDriver initializations
- Strategy Pattern - excellent for different kinds of behaviors
- Other great object oriented design principles such as "programming to an interface and not an implementation"

3. [Selenium Design Patterns by Dima Kovalenko](#)

Selenium Design Patterns by Dima Kovalenko is an excellent book that will teach you some very valuable automation design patterns, regardless of the tools that you use. You will learn:

amazon



Selenium Design
Patterns and...

\$31.99 



- Hermetic Design Pattern
- Page Object Pattern
- Spaghetti Antipattern
- And much more

4. [Experiences of Test Automation by Dorothy Graham and Mark Fewster](#)

This is an excellent resource for test automation. Dorothy and Mark have a lot of experience and help you to overcome many hurdles when dealing with test automation. Even today, I still see people making a lot of mistakes that could be overcome by reading this resource. You will learn some valuable techniques for how to:

amazon



Experiences of
Test...

\$43.99 



- Prioritize automation
- What to automate
- How to automate
- Management issues
- Technical issues
- Database automation
- Regression testing in production
- Automating the testing of complex government systems.

5. [Agile Testing by Lisa Crispin and Janet Gregory](#)

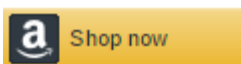
I originally picked up this book to become a better tester in general. Although I am still reading this book, I have learned some valuable information. Some things that you will learn are:

amazon



Agile Testing: A Practical...

\$42.47 



- How to overcome barriers to test automation
- How to get testers engaged in agile development
- Where testers and QA managers fit on an agile team
- What to look for when hiring an agile tester
- How to transition from a traditional cycle to agile development
- How to complete testing activities in short iterations
- How to use tests to successfully guide development

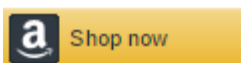
6. [Refactoring: Improving the Design of Existing Code by Martin Fowler and Kent Beck](#)

amazon



Refactoring: Improving the...

\$46.38 



I don't care what anyone says. A good Test Automation Engineer is a good programmer. Now, we may never work for Google developing Google Chrome, but we should have the capability to understand good code and write good code. We should have the capability to design a maintainable, robust, and flexible test automation framework. When we face one that isn't good, we should have the capability to refactor it.

7. [Selenium Guidebook](#)

This is an excellent resource from Dave Haeffner that is purely focused on teaching you Selenium WebDriver. He goes through all of the pain points of working with Selenium and covers them one by one. Some topics that you will learn are:

- Getting Started
- Finding and Verifying Locators
- Your First Test
- Writing Maintainable Tests with Page Objects
- Writing Super Maintainable Tests with a Base Page Object



1. [Selenium HQ Wiki](#)

Selenium WebDriver

You cannot have a resource guide to test automation without including the headquarters of knowledge for Selenium WebDriver. This is a fantastic wiki for a great deal of information related to Selenium. Some of the topics that you can read about from the contributors themselves include:

- [Advanced User Interactions](#)
- [Building WebDriver](#)
- [Developer Tips](#)
- [PageFactory](#)

2. [Ultimate QA](#)

Selenium Webdriver | Automation Testing | Quality Assurance | Software Testing

This is my home base where I talk about everything related to QA with a serious focus on automated software testing using Selenium WebDriver. I have both posts and actual video tutorials that teach you step-by-step. Here are some examples of what you can learn:

- [Common Selenium WebDriver Errors and How to Fix Them](#)
- [Complete Selenium WebDriver with C# Course](#)
- [Introduction to Sauce Labs and Browser Stack](#)
- [How to Work with iFrames using Selenium WebDriver](#)

3. [Elemental Selenium](#)

Dave Haeffner

Selenium WebDriver | Ruby

This is a serious gold mine of information when it comes to Selenium WebDriver. Forget that it's only with Ruby; that's irrelevant. If you want to learn how to perform impressive tasks with Selenium WebDriver, go through the archives and admire the code. Here are a few examples:

- [How to work with Selenium Grid](#)
- [How to use Safari](#)
- [How to do load testing with JMeter and Selenium](#)
- [How to test for broken images](#)

4. [JoeColantonio.com](https://joe.colantonio.com)

Automation Testing | QA | Development

Without a doubt, Joe is one of my favorite thought leaders in test automation. Joe constantly provides quality content regarding all kinds of different subjects. This is my default blog for general QA learning. I strongly recommend that you check it out. The subjects include:

- [Learning test automation](#)
- [Learning about pair testing](#)
- [Learning about security testing](#)
- [Learning QTP / UFT](#)
- [Learning mobile test automation](#)

5. [W3C Schools](https://www.w3schools.com)

HTML | XPath | CSS | Web

If you are going to be doing any kind of test automation, you need to learn some basics about HTML and other web technologies. This has excellent resources to help you get started:

- [HTML](#)
- [XPath](#)

6. [Automate The Planet](https://www.automatetheplanet.com)

Anton Angelov

Test Automation | C# | Jenkins | Visual Studio | TFS | Telerik Test Studio

Anton delivers high-quality content that helps me to grow as a Test Automation Specialist. He covers a bunch of amazing topics related to test automation. For example:

- [Compelling Sundays will have a collection of his favorite posts](#)
- [A complete series on design patterns for test automation](#)
- [Deep coverage of Selenium WebDriver](#)

7. [Better Software Magazine by StickyMinds](https://www.bettersoftwaremagazine.com)

Topics Covered: *Software Testing, Software Development, DevOps*

This is a free monthly publication that focuses on topics such as Software Testing, Software Development, DevOps, and much more.

1. [Automation Guild](#)

Test Automation

This is by far the best online conference I have ever attended. All other online conferences are deeply disappointing when compared to the Automation Guild. It is extremely focused and convenient. A small sample of all the talks there include:

- [If You Want To Automate, You Learn to Code](#)
- [Using Page Object Pattern to Dramatically Stabilize Your Automation](#)
- [How to Grade Your Selenium Tests](#)
- [Screenplay Pattern with Serenity BDD](#)

2. [StarWest Virtual Conference](#)

Free | Test Automation | Software Testing

This is another option for an online conference that can have some benefit for you. Honestly, a lot of the talks are just self promotion and useless information about a specific tool. However, there might be a few talks here that pique your interest. Plus, it is free.



1. [Grading the Quality of Selenium Tests](#)

Test Automation Grading Rubric | Selenium WebDriver | Automation Best Practices

This source is a fantastic webinar by Dave Haeffner that I highly recommend. He tackles a really interesting topic of grading your automation tests based on a rubric that he devised which actually helps you to analyze how good your automated tests are. This is one online video that you should watch to seriously improve your automated software testing.

2. [Page Objects in Test Automation](#)

Test Automation | Selenium WebDriver | Page Object Pattern

This is a free course on Youtube that will give you a complete understanding of the Page Object Pattern when it comes to test automation. Using Selenium WebDriver, I show you how to create readable functional tests, how to create Page Objects, and how to scale your Page Objects when your automation is beginning to take shape.

3. [Selenium WebDriver Keyboard + Mouse Actions](#)

Test Automation | Selenium WebDriver | User Interactions

This is a free course on Youtube that will give you a complete understanding of how to perform keyboard and mouse interactions using Selenium WebDriver. These skills are useful so that you are able to do things like drag n' drop, resize, draw, hover, and much more.

4. [“Getting Test Automation Right”](#)

Test Automation Techniques

This video is a Zephyr presentation regarding the best techniques to get test automation right. The presentation is really fantastic because of the guests on this webinar. [Dave Haeffner](#), [Joe Colantonio](#), and [John Sonmez](#) are three powerful minds that share their experiences here. They cover everything from basic Selenium WebDriver tips to advanced topics to help improve the stability of your tests.

5. [“Building an Automation Framework That Scales”](#)

Test Automation | Scalability

This is a great webinar from Telerik by **Peter Kim** which goes into depth about how to build a test automation framework that scales. He teaches a really interesting technique where he controls all of his objects through an XML file, therefore making his tests externally configurable without the need to modify code.



1. [Page Objects in Test Automation](#)

Test Automation | Page Objects | Selenium WebDriver | Best Practices

This is my presentation from the Page Objects in Test Automation course. The goal of this presentation is to help you understand how to drastically improve the stability of your automated functional tests.

You will learn:

- Why functional test automation can create flaky tests
- Why the Page Object Pattern is the best approach to test automation design
- How to design a good Page Object Pattern
- How to work with large page objects
- And much more!

2. [Test Automation Trends for 2016 and Beyond](#)

Test Automation | Trends | Frameworks | Languages

Joe Colantonio talks about the latest trends in the IT industry so that you can make better decisions for your career. Topics include which test automation tools are growing, what programming languages you should learn, what development methodologies will dominate the future, and the future of Test Driver Development, and these are just a few of the insights provided by this excellent SlideShare.

3. [Managing Continuous Delivery of Mobile Apps for the Enterprise](#)

Continuous Integration | Automated Testing

What we have here is an excellent SlideShare presentation regarding Continuous Integration and a good approach to implementing it. Sauce Labs talks about source control, build tools, CI tools, self-testing builds, and much more.

4. [Three Approaches to Optimizing Your Selenium Test Designs](#)

Test Design | Selenium WebDriver

This is a great SlideShare that describes the positives and negatives of the Page Object Model, Keyword Driven Frameworks, and Behavior Driven Development.

Tear Down

I hope that you enjoyed all of these helpful automation testing resources.

They are some of the best that I have found over my years, and I wanted to share them with you. Feel free to let me know what you think in the comments below. Until next time, my friend.

