12/15/19 – 12/21/19

Resources for Webist and Data Scientist

By CyberApprentice

**Introduction**

In this writing, I will provide resources in reference to two fields of study, data science, and web design/development. The resources will consist of **video series, channels, books, and other online course material**. The resource types are derived from what I personally use in my day-to-day studying so much of it is free, but I will explicitly mention the cost factors for clarity. In addition, any paid material is left up to the audience, but it helps if one sees it as an investment in oneself and their future. Gathering of the material is mainly through my personal repository accumulated over the years, asking peers, and Internet searches. And with any of the material suggested, it is almost always best to refer to the latest edition, especially with new topics such as Data Science that are rapidly developing. Disclaimer: As my field of study is focused on Cyber Security, my personal resources within the field of data science and web design are limited. The amount of text will be but will provide a high-level overview. The tables contain a column named *Index* to only show count, not a suggested order to complete or priority. Also, the amount of material will be restricted as to not intimidate the audience with a large number of options, or leave the viewers confused or indecisive with where to begin. Effectively, this is meant to serve as a reference within the two fields targeted towards beginners.

**Web Development**

What is web development? Web development is the process of applying code to a website layout to make it functional. To create this code, one must know the language to do so. The most common languages are: HTML5, CSS3 (i.e. SASS), and JavaScript (i.e. more specifically, ReactJS, JQuery, Vue.js, & Redux libraries) are standard for structure, styling, and interactions.[[1]](#endnote-1) These languages are primarily used for **front-end development**. Front-end focuses on transforming the design into reality or how the website looks.[[2]](#endnote-2) In addition, front-end developers should be concerned with domain hosting. To include applications, the following languages are website specific: PHP (e.g. Laravel), ASP.net, and Angular. And lastly, the following are general-purpose languages that can be applied anywhere but are incredibly successful within web development: Python (e.g. Django, Flask), Elixir, Go (Golang), C/C++, SQL & NoSQL, and Java. These languages are used by **back-end developers**. Back-end that focuses on how the website works (e.g. security, resource utilization/leaks, debugging, adding features, server configuration, data storage, etc.).iv

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Book Material for Web Development | | | | | |
| Index | Title | Author(s) | | Cost ($) | Source |
| 1 | HTML & CSS, and JavaScript & JQuery (2 book set)  \*Also, he newly published, *PHP & MySQL: Server-side Web Development* for ~$45. | Jon Duckett | | ~$26.99 | [Coder Coder](https://coder-coder.com/best-web-development-books/) |
| 2 | You don't know JS | Kyle Simpson (Getify on GitHub) | | Open-source | [Getify on GitHub](https://github.com/getify/You-Dont-Know-JS) |
| 3 | Front-End Web Development: The Big Nerd Ranch Guide | Chris Aquino & Todd Gandee | | ~$23.49 – 35.60 |  |
| 4 | Secrets of the JavaScript Ninja | John Resig, Bear Bibeault, & Josip Maras | | ~$26.31 – 42.74 |  |
| 5 | For Backend development, any program-specific book (e.g. Programming: Principles and Practice Using C++: By Bjarne Stroustrup) will suffice. Instead, I will provide a link to multiple books that are program-specific located in the Source column. |  | |  | [Geeks for Geeks](https://www.geeksforgeeks.org/best-books-to-learn-back-end-web-development/)  [Vandelay Design](https://www.vandelaydesign.com/best-web-development-books/) |
| End | | | | | |
| Course Material for Web Development | | | | | |
| Index | Title | Author(s) | | Cost ($) | Source |
| 1 | Web Development By Doing: HTML / CSS From Scratch | Bradley Berger | | Free | [Udemy](https://www.udemy.com/course/web-development-learn-by-doing-html5-css3-from-scratch-introductory/) |
| 2 | The Odin Project |  | | Free | [The Odin Project](https://www.theodinproject.com/home) |
| 3 | The Web Developer Bootcamp | Colt Steele | | ~$10 | [Udemy](https://www.udemy.com/course/the-web-developer-bootcamp/) |
| 4 | Learn Enough courses | Michael Hartls | | Varies | [Learn Enough](https://www.learnenough.com/courses) |
| 5 | Front-End Web Development with React | Jogesh K. Muppala | | Free | [Coursera](https://www.coursera.org/learn/front-end-react) |
| End | | | | | |
| YouTube Channels for Web Development | | | | | |
| Index | Channel name | | Source | | |
| 1 | Traversy Media | | [Traversy Media's YouTube Channel](https://www.youtube.com/user/TechGuyWeb) | | |
| 2 | Derek Banas | | [Derek Banas's YouTube Channel](https://www.youtube.com/user/derekbanas) | | |
| 3 | The Net Ninja | | [The Net Ninja's YouTube Channel](https://www.youtube.com/channel/UCW5YeuERMmlnqo4oq8vwUpg) | | |
| 4 | Fun Fun Function | | [Fun Fun Function's YouTube Channel](https://www.youtube.com/channel/UCO1cgjhGzsSYb1rsB4bFe4Q) | | |
| 5 | DevTips | | [DevTips's YouTube Channel](https://www.youtube.com/user/DevTipsForDesigners) | | |
| 6 | Academind | | [Academind's YouTube Channel](https://www.youtube.com/channel/UCSJbGtTlrDami-tDGPUV9-w) | | |
| End | | | | | |
| Other Online Material for Web Development | | | | | |
| Index | Website | Material | | | |
| 1 | [CSS Tricks](https://css-tricks.com/) | Guides, videos, articles, and more | | | |
| 2 | [Tympanus](https://tympanus.net/codrops/) | Guides and articles | | | |
| 3 | [HTML Dog](https://www.htmldog.com/) | Guides | | | |
| 4 | [Dev.to](https://dev.to/) | Articles | | | |
| 5 | [Mozilla](https://developer.mozilla.org/en-US/docs/Web/Guide) | Guides and technologies | | | |
| 6 | [David Walsh's Blog](https://davidwalsh.name/) | Blog with tutorials | | | |
| 7 | [Sindresorhus on GitHub](https://github.com/sindresorhus/awesome) | A VERY EXTENSIVE list of resources | | | |
| 8 | [Land-book](https://land-book.com/)  [Admiretheweb](https://www.admiretheweb.com/)  [Typ](https://typ.io/) | Reference material for how other people are building websites (i.e. art gallery) | | | |
| End | | | | | |
| Certifications for Web Development | | | | | |
| In the field of Web Development, certifications are not valued. The best path for showcasing your skill is having an open-source portfolio. The following websites are great resources for posting code and projects:   * [Stackblitz](https://stackblitz.com/) * [Codepen](https://codepen.io/) * [Github](https://github.com/) * [Jsfiddle](https://jsfiddle.net/) * [Plunker](https://plnkr.co/) * [CSS Deck](http://cssdeck.com/) * [Dabblet](http://dabblet.com/) * [Live Weave](https://liveweave.com/) | | | | | |
| End | | | | | |

**Web Design**

What is web design? Web design is the architectural layout that users will see and be able to interact with when visiting a website.[[3]](#endnote-3) In other words, it is the pictorial image of how the website will be organized as seen below (*Figure 1*).

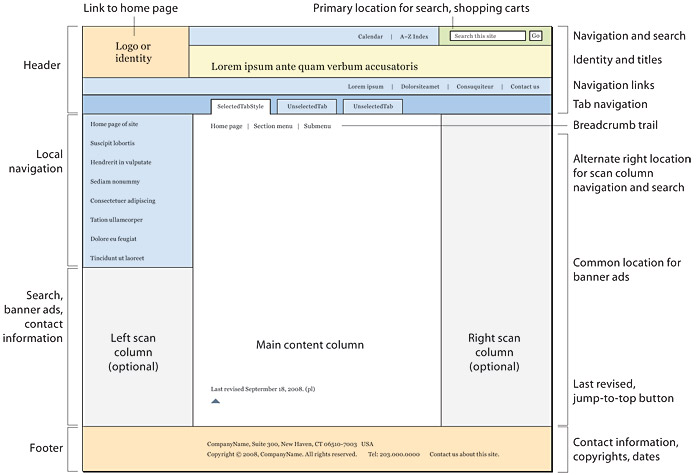


Figure 1 – Web Page Structure Example[[4]](#endnote-4)

This more appropriately dives into UI (user interface) design and UX (user experience) design. Personally, I am unfamiliar with the terms and they are apparently, “some of the most confused and misused terms in our field”, so I will borrow a quote to describe them, “UX design is all about the overall feel of the experience, while UI design is all about how the product’s interfaces look and function.”[[5]](#endnote-5) For a more detailed explanation, please watch this 15-minute video by YouTuber Jesse Showalter entitled, [*UX Design vs UI Design | What's the Difference? Which one is right for me?*](https://www.youtube.com/watch?v=RtPnVtXw6HU)*.*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Book Material for Web Design | | | | | | | | |
| Index | Title | | Author(s) | | Cost ($) | | Source | |
| 1 | Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability | | Steve Krug | | ~$21 - 25 | |  | |
| 2 | Design for Hackers: Reverse Engineering Beauty | | David Kadavy | | ~$15.47 – 17.84 | |  | |
| 3 | Hooked: How to Build Habit-Forming Products | | Nir Eyal | | ~$13.99 – 24.01 | | \*Note\* Not directly for web site design, but focuses on user engagement and retention (i.e. having customers return to your site) | |
| 4 | A Practical Guide to Designing for the Web | | Mark Boulton | | Free eBook  Physical copy cost ~$6.85 | | [Designing for the Web](https://designingfortheweb.co.uk/) | |
| 5 | Elegant Web UI Design Techniques: Flat Design & Colors | |  | | Free eBook | | [UXPin](https://www.uxpin.com/studio/ebooks/web-ui-design-techniques-colors-flat-design/) | |
| End | | | | | | | | |
| Course Material for Web Design | | | | | | | | |
| Index | Title | | Author(s) | | Cost ($) | | Source | |
| 1 | Web Design for Web Developers: Build Beautiful Websites! | | Jonas Schmedtmann | | Free | | [Udemy](https://www.udemy.com/course/web-design-secrets/) | |
| 2 | A course pathway using Adobe Illustrator | |  | | Paid by UTSA | | [Plural Sight](https://www.pluralsight.com/paths/illustrator) | |
| 3 | Introduction to Web Design and Development | | James Williamson | | $25 (or use it within a 1-month free trial) | | [Lynda Learning (LinkedIn)](https://www.linkedin.com/learning/introduction-to-web-design-and-development?trk=featured-topics-card_learning_card_title&upsellOrderOrigin=aff_src.aff-lilpar_c.partners_pkw.1238999_plc.Digital%20Defynd%20-%20LinkedIn%20Learning_pcrid.449670_learning) | |
| 4 | The 2019 UI Design Crash Course for Beginners | | DesignCourse | | Free | | [YouTube](https://www.youtube.com/watch?v=_Hp_dI0DzY4) | |
| 5 | Web Design Process: B2B Startup Case Study | | Flux | | Free | | [YouTube](https://www.youtube.com/watch?v=Y1vfnYpOFD8) | |
| End | | | | | | | | |
| YouTube Channels for Web Design | | | | | | | | |
| Index | Channel name | | | Source | | | | |
| 1 | DesignCourse | | | [DesignCourse's YouTube Channel](https://www.youtube.com/channel/UCVyRiMvfUNMA1UPlDPzG5Ow) | | | | |
| 2 | MAK | | | [MAK's YouTube Channel](https://www.youtube.com/user/grafxtv/videos) | | | | |
| 3 | Jesse Showalter | | | [Jesse Showalter's YouTube Channel](https://www.youtube.com/user/JesseAtomic/videos) | | | | |
| 4 | Flux | | | [Flux's YouTube Channel](https://www.youtube.com/channel/UCN7dywl5wDxTu1RM3eJ_h9Q) | | | | |
| 5 | Caler Edwards | | | [Caler Edwards's YouTube Channel](https://www.youtube.com/user/CalerEdwards) | | | | |
| \*Note\* Some of the channels in the **Web Development** section above can also provide additional Web Design videos sense the fields are closely linked and the channels provide a wide variety of expertise. Those channels are (but not limited to): [Traversy Media](https://www.youtube.com/user/TechGuyWeb) and [DevTips](https://www.youtube.com/user/DevTipsForDesigners) | | | | | | | | |
| End | | | | | | | | |
| Other Online Material for Web Design | | | | | | | | |
| Index | Website | | Material | | | | | |
| 1 | [Web Style Guide](https://webstyleguide.com/) | | Website formatted book | | | | | |
| 2 | [Smashing Magazine](https://shop.smashingmagazine.com/) | | A selection of 61 books (not free) that revolved around coding, design, mobile, graphics, user interface design, and word press. | | | | | |
| 3 | [Abookapart](https://abookapart.com/products/) | | Another selection of books (not free) | | | | | |
| 4 | [Webflow](https://ebooks.webflow.com/) | | Free eBooks on web design and freelancing | | | | | |
| 5 | [Creativebloq](https://www.creativebloq.com/net-magazine) | | A magazine for web designers & developers | | | | | |
| 6 | [Hongkiat](https://www.hongkiat.com/blog/free-ebooks-for-designers-developers/) | | A large selection of books that contain different aspects when it comes to design such as colour, using applications such as photoshop, and so on. All are FREE! | | | | | |
| 7 | [Hackid on GitHub](https://hackid.github.io/tags.html%23visual-design-cat-ref) | | An archive of design-related references | | | | | |
| 8 | [Prototypr](https://blog.prototypr.io/books-that-shaped-my-career-as-ux-ui-designer-102335e0780e) | | Additional books within the field of design | | | | | |
| End | | | | | | | | |
| Certifications for Web Design | | | | | | | | |
| Index | Name | Vendor | | | | Cost ($) | | Notes |
| 1 | Adobe Certified Expert (ACE Specialist) | Adobe | | | | 180 | | Application-specific (e.g. ACE for Dreamweaver, ACE for Photoshop, etc.) |
| Certifications are more or less seen the same as in the **Web Development** section; not valuable. Presenting your content is the best way to showcase your abilities. Refer to that section for links to websites to do so. | | | | | | | | |
| End | | | | | | | | |

Tools are important in some fields and Web Design is one of them. Having the toolset that fits your needs to unleash your creative potential is essential to capitalize on your strengths and optimal work environment. Some toolsets are Adobe Suite (e.g. Photoshop, Illustrator, Dreamweaver, Fireworks, XD, etc.), InVision Studio, Figma, openElement, Google Web Designer Marvel, GIMP, UXPin, Adobe Kuler (Color palette), and plenty more[[6]](#endnote-6). As UTSA students, we get most Adobe products for free or discounted. And to demo your creations, the following websites can help with that:

* [MockPlus](https://www.mockplus.com/)
* [Webflow](https://webflow.com/)
* [Wix](https://www.wix.com/)
* [WordPress](https://wordpress.com/)
* [Weebly](https://www.weebly.com/)
* [Squarespace](https://www.squarespace.com/)

Lastly, some free font repositories are listed below to get things started[[7]](#endnote-7):

* [Fresh Fonts](https://www.freshfonts.io/)
* [Dafont](https://www.dafont.com/pondspell.font)
* [Public Sans](https://public-sans.digital.gov/)

**Data Science**

What is data science? It is a multifaceted life cycle of capturing, maintaining, processing, analyzing, and communicating the data.[[8]](#endnote-8) For example, this can be seen as the following: data extraction (i.e. capturing), data warehousing (i.e. maintaining), data mining (i.e. processing), predictive analysis (i.e. analyzing), and data visualization or business intelligence (i.e. communicating). There are many different domains within the field of data science: statistics, probability, machine learning, deep learning, natural language processing, computer vision, artificial learning, and programming (i.e. more specifically, Python and R). It is up to the audience which field to specialize in, but one has to have a solid foundation, to begin with.

Within my personal repository, I have a book called *Data Science & Big Data Analytics: Discovering, Analyzing, Visualizing, and Presenting Data* by EMC Education Services. I have not read this book and because of the topic, it isn’t high on the list. It isn’t mentioned above because it wasn’t “the best data science book”, but I picked it up since I got it for free and wanted a general-purpose book for a solid introduction. Again, I’m not recommended it as I haven’t even read a summary of the book. Other than that, below are my recommended resources.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Book Material for Data Science | | | | | | | | |
| Index | Title | | Author(s) | | Cost ($) | | Source | |
| 1 | Introduction to Statistical Learning | | Gareth James | | ~24.18 – 59.99 | | Additional resources pertaining to the book are [here](http://faculty.marshall.usc.edu/gareth-james/ISL/) | |
| 2 | Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow | | Aurélien Géron | | ~$37.49 – 40.49 | | Additional resources pertaining to the book are [here](https://github.com/ageron/handson-ml2) | |
| 3 | R for Data Science | | Andrew Gelman | | eBook is free  Hard copy cost ~$34.77 | | [eBook](https://r4ds.had.co.nz/) | |
| 4 | The Signal and the Noise | | Nate Silver | | ~$8.00 – 14.31 | |  | |
| 5 | Data Science for Business | | Foster Provost & Tom Fawcett | | ~$8.09 – 33.49 | |  | |
| 6 | Bayesian Data Analysis | | Andrew Gelman | | ~$26.61 – 53.22 | | Additional resources pertaining to the book are [here](http://www.stat.columbia.edu/~gelman/book/) | |
| 7 | A Course in Machine Learning | | Hal Daumé III | | Free eBook  No Hard copy available | | [eBook](http://ciml.info/) | |
| End | | | | | | | | |
| Course Material for Data Science | | | | | | | | |
| Index | Title | | Author(s) | | Cost ($) | | Source | |
| 1 | Learning from Data | | Professor Yaser S. Abu-Mostafa | | Free | | [California Institute of Technology (CalTech)](https://work.caltech.edu/telecourse)  [YouTube Playlist of the course lectures](https://www.youtube.com/watch?v=mbyG85GZ0PI&list=PLD63A284B7615313A) | |
| 2 | The open-source curriculum for learning Data Science | | Clare Corthell | | Free | | [datasciencemasters on GitHub](https://github.com/datasciencemasters/go) | |
| 3 | CS109 Data Science: A Harvard course that includes slides, videos, labs, and additional resources | | Joe Blitzstein | | Free | | [CS109 Data Science - 2015](http://cs109.github.io/2015/index.html)  [CS109 Data Science - 2014](http://cs109.github.io/2014/index.html)  [cs109 on GitHub](https://github.com/cs109) | |
| 4 | Introduction to Computational Thinking and Data Science: A MIT course that includes slides, videos, and assignments | | Professor Eric Grimson | | Free | | [Introduction to Computational Thinking and Data Science](https://ocw.mit.edu/courses/electrical-engineering-and-computer-science/6-0002-introduction-to-computational-thinking-and-data-science-fall-2016/) | |
| 5 | Welcome to Artificial Intelligence | | Vinoth Rathinam | | Free | | [Udemy](https://www.udemy.com/course/road-map-to-artificial-intelligence-and-machine-learning/) | |
| End | | | | | | | | |
| YouTube Channels for Data Science | | | | | | | | |
| Index | Channel name | | | Source | | | | |
| 1 | Data School | | | [Data School's YouTube Channel](https://www.youtube.com/user/dataschool) | | | | |
| 2 | sentdex | | | [sentdex's YouTube Channel](https://www.youtube.com/sentdex) | | | | |
| 3 | 365 Data Science | | | [365 Data Science’s YouTube Channel](https://www.youtube.com/channel/UCEBpSZhI1X8WaP-kY_2LLcg) | | | | |
| 4 | Data Science Dojo | | | [Data Science Dojo’s YouTube Channel](https://www.youtube.com/user/DataScienceDojo) | | | | |
| 5 | Intellipaat | | | [Intellipaat’s YouTube Channel](https://www.youtube.com/user/intellipaaat) | | | | |
| 6 | DataCamp | | | [DataCamp's YouTube Channel](https://www.youtube.com/channel/UC79Gv3mYp6zKiSwYemEik9A) | | | | |
| 7 | The Data Incubator | | | [The Data Incubator's YouTube Channel](https://www.youtube.com/channel/UCtY8JjMQpzYb5FFvUr2JnUw) | | | | |
| 8 | The Semicolon | | | [The Semicolon's YouTube Channel](https://www.youtube.com/channel/UCwB7HrnRlOfasrbCJoiZ9Lg) | | | | |
| End | | | | | | | | |
| Other Online Material for Data Science | | | | | | | | |
| Index | Website | | Material | | | | | |
| 1 | [Reddit](https://www.reddit.com/r/datascience/wiki/resources%23wiki_books) | | Additional books, podcasts, blogs, and online courses | | | | | |
| 2 | [Reddit](https://www.reddit.com/r/datascience/comments/8jneyb/ds_book_suggestionsrecommendations_megathread/) | | Additional books | | | | | |
| 3 | [tpn on GitHub](https://github.com/tpn/pdfs) | | A HUGE (1000+ presentations, eBooks, and more) repository I found during my research | | | | | |
| 4 | [Data Camp](https://www.datacamp.com/) | | Courses for data scientists. Supplemental material with course guidance - [DataCamp Path](https://towardsdatascience.com/the-best-data-science-learning-resources-out-there-and-my-journey-into-data-science-81c5a6ec67bc) | | | | | |
| 5 | [Towards Data Science](https://towardsdatascience.com/) | | Tons of resources for data scientists | | | | | |
| 6 | [Vertabelo Blog Post](https://academy.vertabelo.com/blog/12-best-data-science-resources-on-the-internet/) | | A diverse set of resources consisting of competitions (although this is later in your data science career), blogs, courses, | | | | | |
| End | | | | | | | | |
| Certifications for Data Science | | | | | | | | |
| Index | Name | Vendor | | | | Cost ($) | | Notes |
| 1 | Data Science - Associate Level (DCA-DS) | Dell | | | | $200 | | Product agnostic |
| 2 | Microsoft Certified: Azure Data Scientist Associate | Microsoft | | | | $165 | | Only if the company uses Azure as datastore |
| 3 | Certified Analytics Professional (CAP) | INFORMS | | | | $695 | | Intermediate-level certification |
| 4 | AWS Certified Big Data - Specialty | Amazon | | | | $300 | | Only if the company uses AWS as datastore |
| 5 | SAS® Certified Data Scientist | SAS | | | | $970 | | This certification is reached when you have received two other SAS certs that cost $970 total. This is SAS specific. |
| As you’ve noticed, these certifications are application specific (except CAP). This isn’t necessarily a requirement to get a job, but once you get a job and know what technology they’re using, you can reach for the application-specific certification to improve your skills, promote, etc. There are other vendors and technologies such as Google cloud services, any programming language, Cloudera, Hortonworks, Mongo, Oracle, and so on. A lot of them are cloud-based and there hasn’t been any cloud resources explicitly listed, but that is intermediate terrain while the focus is understanding the basics and foundations. | | | | | | | | |
| End | | | | | | | | |

**Extras**

An alternative with great feedback (i.e. comments) is an article called *The 2019 Web Development (Frontend + Backend) Roadmap* by *javinpaul* that was released this year in reference to modern web development.[[9]](#endnote-9) One other mention is to create an online portfolio to showcase your skills. Even if it is a playground for testing, it can show what you are currently working on. The following table includes general resources to reference for programmers.

|  |  |
| --- | --- |
| Name | Notes |
| W3Schools |  |
| YouTube |  |
| Stackoverflow |  |
| Udemy |  |
| edX |  |
| Khan Academy |  |
| Tutorialspoint |  |
| CodeAcademy |  |
| Codewars |  |
| Edureka |  |
| Code Avengers |  |
| Udacity |  |
| FreeCodeCamp |  |
| edureka! |  |
| General Assembly |  |
| MIT OpenCourseware |  |
| Simplilearn | Focus is towards certifications but has general topics too |
| PluralSight | Free through UTSA |
| HumbleBundle | Great for buying resources in bulk on the low |
| *Clean Code* by Robert Martin and *The Clean Coder* by Robert Martin | Two books that establish the fundamentals of programming. It is not web development specific, so it is in the extras portion. |
| Harvard Online Learning | Free & Paid |
| Lynda | LinkedIn Learning |

My final suggestion is entering competitions that put your work up against others. Even if you don’t win, it informs employers how serious and competitive you are. At the end of the day, a business wants a website that gives them a competitive advantage, and this separates you from rivals when competing for positions.

**Conclusion**

The material above is a list of available materials to serve as a guide for beginners. I am a novice and have little to no knowledge within any of the fields mentioned above, but I do hope the material within this writing can help get the viewers started. Improvements upon this writing could be establishing a path. However, I believe this is best suited for someone with experience within the field to provide their wisdom as someone that has gone through the phases. In addition, this is tailored towards the person’s desires. For example, if someone wanted to be an expert in web applications, I would include other languages that aren’t present like *WebAssembly* instead of pushing someone towards *HTML*. The material presented is gathered from outside sources so I cannot attest to their validity, but I believe it is a great start in becoming someone more proficient in the field tomorrow by starting here today than sitting in thought on when and where to start. At the very least, take the time, browse through all the resources to see what interests you. Best of luck!

**Bibliography (16th Edition Chicago Style)**

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