# Internet Resource Guide for Computer Science Majors

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# Preface to Using This Guide

The following sections contains information for the reader to understand the content and the purpose of this guide. It is entirely up to the reader to use and read any part of the guide to base on their pace or interest. The readers will understand why the guide is organized in such a manner, and what is assumed of the readers.

## *Content of the Guide

This guide contains numerous material that may be beneficial to those who are beginners in programing or recently have begun learning computer science. The material that will be included in this guide will vary from an information directory, discussion room, professional association, to published journal. Links to the material will be included along with an abstract to allow the reader to get a brief understanding of what the material is about and access to it online.

## Intended Audience and Purpose of the Guide

This guide is appropriate for incoming or freshmen computer science majors and any beginner programmer who have an interest in exploring further into the field. The purpose of this guide is to introduce the vast online resources that an intermediate or advanced programmer or upperclassmen computer science majors might find the resource useful. This guide is very helpful to allow for a beginner to smoothly improve and advance their way through this field.

## Assumptions About the Readers

The reader should have a basic understanding with the practical field of computer science which include programming or application/software development and have the appropriate capacity to understand relatively complicated or new materials. Since the reader have taken up interest in this field, this guide would assume that a reader would have appropriate knowledge on technology and the skills to access websites, download program or pdf.

# *Organization of The Guide

The organization of this guide is based on the technical knowledge that the reader may have regarding this field. The guide is ordered in an increasing difficult/technical level which expect the reader to improve as they advance further into the guide. The professional association and published journal resource is placed near to the end due the medium to high level of technical knowledge that the reader require to understand the material that is presented. Other than the ordering of material based on difficulty, each page is numbered to allow easier navigation throughout the guide to provide the reader a smooth experience.

# Tips to Using the Guide

- It is recommended to read the guide in a linear manner since the material at the end contains material that requires deeper understanding of topics in this fields.
- It is best to read the abstract provided for each link to understand what material the resource contains, and access the website after you have a brief understanding of what the site might offer to the reader.
- Reading the tips below the abstract will allow the reader a smoother experience while accessing the resource, this will reduce complication and confusion when navigating through the site and allows for faster familiarity with the website.

# ~~~ Directory of Information Sources ~~~

## Stack Overflow

**Website:** https://stackoverflow.com/

**Abstract:**

This website is similar to an internet forum but it is more closely similar to a directory of information, focused on programming and computer science related topics. The main difference is that a user may ask questions or answer posted questions relating to this fields; The responses are listed in an order based on "upvote" which is similar to a rating system, this increases the credibility of a response given from a user of unknown background. This site is very useful if you are stuck on a particular issue in either programming, algorithmic, designing, etc. and need a suggestion or solution.

The main benefit one might gain from this site is a solution to a problem that you may be currently facing since many other people in the same field might have asked a question that is similar if not the same on the site and received a response. Although it is not always completely reliable, but it is a great source of information regarding to computer science in both practical and theoretical form. Besides the plentiful solution that the site contains, this site also contains a list of documentation for programming language and framework that someone in this field may find very useful.

**Tips:**

- You can enter your question into the search bar to see a list of questions that has been previously asked on the site that may be related to your question.
- There is a tag tab on the header of the page that allow you to see all posted questions that is specifically related to the software/language/framework that you're currently using.
- There is a community features on this site which is very similar to groups that focuses on specific topics which is very helpful in asking for help regarding that topics.
- This website also offers a job seeking feature, where many companies posts job opportunities for visitor of this sites to see.

# Google Careers Technical Development Guide

**Website:** https://www.google.com/about/careers/students/guide-to-technical-development.html

**Abstract:**

This is a guide created by Google that is more of a resource directory than it is a guide. It first provides the basic preface and purpose of this guide then followed by a long list of recommended categories that one might find great interest in the field of computer science. The "guide" is ordered in a very linear manner based on the level of difficulty and technical importance which allows the reader to grow in a meaningful way as they progress into the guide. Although this guide is a very simplified example of how a programmer could progress into their studies in the field of computer science, the reader should pay great detail in understanding the pattern of developing into an advanced programmer or diving deeper into the studies of computer science. Each section contains a source link which provide resource to the reader to make progress into mastering each section, some section may not include a link but a recommendation on how to progress into those sections. It could also be beneficial to use this guide when one is stuck as they progress deeper into their studies.

**Tips:**

- The reader should take into great consideration and pay attention to the guide to understand why the guide is ordered the way it is, it serves as a good "path light" for one to progress into their studies.
- Most sections contain links to other resources that one might gain many valuable resources that one might not get from just reading a book or hand-on programming.
- Some of the link will require payment to access its content, so it is best to consider the value and benefit that the listed source might provide.

# ~~~ Discussion Room ~~~

## r/learnprogramming

**Website:** https://www.reddit.com/r/learnprogramming/

**Abstract:**

This is a subreddit of the huge community website reddit.com. It focuses on programming as a whole and it is not limited to questions regarding issues one might face when programming but also discussions on career in programming. This site is very useful since there are other redditors (users) who are willing to answer your questions. One might also find useful and inspirational post regarding a new software or project that a user might find to be of great interest.

Based on my previous experience, this is very similar to feedback service where you receive feedback on your question/post. A beginner in this field might find this site a good resource to develop idea to get started in the field. However, sometime it is hard to verify the credential that a redditor who answer your question have in regard to computer science, unless they are official verified in the subreddit.

**Tips:**

- You can see a different ordering of post in a chronological, trendiness, rising, controversial, or all-time top voted order.
- There are also links on the side that redirect to other subreddit that is related this field.
- This subreddit contains post that varies in form such as question, opinion post, advertisement (the beneficial type), or even other people's finding and point of view
- It is highly recommended to look at post with high number of upvote or post with people's advice or point of view since they can be very interesting and beneficial to programmers.

# ~~~ Professional Associations ~~~

## Association for Computing Machinery (ACM)

**Website:** http://www.acm.org/

**Abstract:**

This is the main website of Association for Computing Machinery, an association that has a focus of advancing computing to make positive impact on the work and help solve tomorrow's problems. ACM is the single largest association that is deeply involved in the field of computing which includes computer science, engineering, electrical engineering and data science. The website contains numerous published article which have made important impact in the field of computing. The site won't have too much information in how to improve your programming skills but it does have a lot of news article that announce future events that might spike an interest into its reader. The association is well organized and connected so one can communicate with a representative from the association to get more information.

**Tips:**

- Although this site does not provide too much on resource to improve your programming skills, one should be well aware that there are special interest groups and publication one might find very interesting and supporting to their field of study
- One can learn about upcoming event such as press conference and summits regarding topics in the field of computing.
- ACM has an archive of published article and journal piece which is very deep in technical jargon but very important to many sub fields.
- There is an education section that included various recommended college-level curriculum for computer science, computer engineering, software engineering, and information technology course. This is useful to have a reference to see how a college student who is in this field would grow under this recommendation.

# ~~~ Professional Journal ~~~

## ACM Computing Surveys

**Website:** http://dl.acm.org/pub.cfm?id=J204&CFID=784197130&CFTOKEN=54443972

**Abstract:**

This is one of the many journal collection that the ACM has archived in their website. This particular collection focuses on the studies of algorithm; it lists articles in the order of most recently downloaded or most cited. This ordering allows the reader to see what might be trending and what might be of significant importance. The content in all of these journals are very technical and expects the reader to have a high level of background knowledge regarding the topic of interest.

A reader who may be lacking these knowledges might see these article as a great source of learning material and inspiration for future self-improvement. There are numerous details that this journal contains regarding general details of all article that is collected, such as the most occurring subject areas, publication year range, publication count, downloads and citation, which are all important to the organization of the journal. You can backtrack to the ACM digital library, to find a large collections of article (Journals) that covers many different sub-fields. It is a great source for someone to find the sub-field that they might find interest or focus and specialize in.

**Tips:**

- It should be warned beforehand that some of the content in the article might be hard for those who had no previous knowledge to understand if not extremely difficult.
- The ACM Journals is a collection of publication which made significant improvement into the field of computing and each sub-field is separated into its own journal of article.
- One might find the details provided in the page to be useful as it proves its relevance to current knowledge and relevance to their topic of interest.