

Internet Resource Guide

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Preface

Audience

This guide is created for students, interns, or current full-time or part-time workers who have a degree in or are studying information sciences and technology. It is important for students to grasp the concepts in the career path and land internships. These are essential for a career in IST. Current interns should continue to grow their skills with the resources provided in this guide.

This is the same with anyone who is working full-time or part-time in the IT world. The goal is to provide valid and cited resources to help their career. These specifically include all components of a computer (like the central processing unit and the random-access memory) and knowledge of one widely used object-oriented programming language (Java is one good example). This guide can also be helpful for computer science students and software engineering students.

Content

The guide gives students studying information sciences and technology the best resources for learning more about computer hardware, software, networking, and how to find and get jobs or internships. First, this guide gives four online resources that are helpful for learning new skills and applying for jobs. The other resources include a government publication, a piece of periodical literature, and a professional journal. All are relevant to information sciences and technology, as well as related fields. One example is computer science.

Assumptions of Reader

The reader should have knowledge of what was previously discussed. This would be software and hardware concepts that are taught in several information sciences and technology courses. Some languages include Java, Python, or C. Programming languages are important depending on the route that is taken when pursuing this college degree. The reader should also understand basic terminology of computer components. The reader should have good problem solving and critical thinking skills. This is important to understand the use of the resources provided. Having the aptitude and showing interest in technology is also extremely important.

Organization

This guide is organized to show online resources for learning more in information sciences and technology. Then it shows a job website and how to use it. The first four are online resources. This is followed by a government publication, a piece of periodical literature, and a professional journal. Each section has an abstract to describe what the resource is and how to use it. It also talks about how helpful it is. Links to each resource are provided above the abstract. There are also tips provided for specific use of the information in each resource.

Online Resources

Coursera



<https://www.coursera.org/>

Abstract

Coursera is a website that offers cheap online classes to learn about interesting skills that are helpful when pursuing a career in information sciences and technology. A certification is awarded to anyone who completes the courses. These usually involve watching videos and answering multiple choice questions. There are many paid courses and free courses. Any skills are helpful when working in IST, and you can even earn an online degree from this platform. It is helpful to strengthen your knowledge of IT software and hardware concepts. It is supported by many large companies, which include Google and IBM, as well as some of the most well-known colleges in the world. Some colleges that are listed here include Stanford and Duke. Some classes and concepts that are taught here include Microsoft Office 365 tools and tips, IT Support from Google or IBM, data analytics, and project management.

Tips for using Coursera:

- When creating an account, sign up and enroll for courses that can help build skills in information technology related jobs. The best time to complete these would be free time during the summer (for college students) or after a college degree is completed. This could also be completed during an internship to gain new skills.
- Click the explore button and select “Take a Free Course” to find all the free courses that the website offers. When searching, there are options to select the subject, skills to learn, the level or difficulty of the course, and the time that the course would take. Other options include learning product, educator, language, and subtitles.
- There are more subjects than just information technology. This can be found when clicking on the explore button and selecting “Browse all Subjects”.
- The “My Learning” tab shows what courses are being taken and which ones are completed. When a course is completed, the user earns a certificate. This will always be on their profile and can be viewed by clicking on “Completed” and finding the completed course. Then select “View certificate.”
- Certifications that are received can be helpful for a resume. It can help one stand out from the rest, showing that they have more skills. One tip for a resume is to only have it be one page long. So put a certification in the “Skills” section of a resume.
- The certification can be downloaded when clicking on “View certificate” in the completed learning section.

CompTIA



<https://www.comptia.org/>

Abstract

CompTIA offers useful industry certifications that can help land a job in information technology. By having an extra certification in IT, it can help to stand out from the competition and improve a resume. They have complete guides on how to pass the tests, and certifications last around three years before getting recertified. This can be for an A+ Test, Cloud+ Test, or many others. To become certified requires a person to study for around three to six months and sign up to take a test. The guides are used for studying them, and they are each over one thousand pages long. One thing to note is that the exams cost money, and there are many different deals to buy. However, a lot of jobs in information technology are looking for people certified with CompTIA. It is best to research what jobs are asking for one of these certifications. This helps many to understand how to start working in these fields.

Tips for using CompTIA:

- Most of the plans are expensive. The most important thing to receive is one of the CompTIA certifications. Specifically, the one that is needed depending on the job. It is best to research for resources required for an exam and then buy just the exam voucher. The other programs can run up to thousands of dollars.
- The most well-known and best certification to get is the CompTIA A+ Certification. This really can open the door to the IT world. There are also thousands of large companies that recommend this certification for positions in their company. The jobs that are listed can be found here:
<https://www.comptia.org/faq/a/what-jobs-can-i-get-with-a-comptia-a-certification>
- Click on “Certifications” in the top right corner to see other certifications that are being offered. They are all useful in the IT world, and they all have guides for passing them. Be sure to research the exact names of the exams to take. They each usually have two exams required before being certified.
- Each certification must be renewed. The best time to take one of these would be after a two- or four-year degree to gain some more skills with an associate or bachelor's degree.

W3 Schools

<https://www.w3schools.com/>



Abstract

W3schools is an extremely useful website that can teach anyone how to code. There is a huge library of languages that can be learned here. These include Java, SQL, C, C++, Python, JavaScript, and many more. This is for someone who wants to learn the basics of programming. It is also for someone who knows one programming language and wants to learn another or improve their current skills. Depending on the route for an information sciences and technology major, there can be a lot of programming or a small amount of it. The website offers a huge library of lessons depending on the coding language. It is very well organized and user friendly, which is helpful to teach people how to code. This website allows users to practice their coding skills on the website for a beginner level and more advanced level. Some important skills that are taught in a major like information sciences and technology are Java object-oriented programming, web development with HTML, CSS, and JavaScript, and structured query language and MySQL Workbench.

Tips for using W3 Schools:

- The website has similarities to Coursera by teaching the user with courses and certification programs
- It provides examples for each topic, which makes it user-friendly and easy to understand. By studying real examples, it helps to see what the purpose of a programming or scripting language is.
- There are quizzes that test knowledge based on the lesson of a certain programming language. By taking quizzes, it will show certain weaknesses that need to be improved on. Make sure to go back and study.
- W3 Schools also has a community where a user can interact and connect with other learners. It is always helpful to talk to others who share similar interests. Reach out to ask questions and make new friends.
- When learning one high level programming language like Java, this knowledge can be applied to many other languages. The website W3 schools also teaches this language. Java is also one of the best languages to start learning. After understanding this, it can be applied to languages like Python, C++, and JavaScript.

LinkedIn

<https://www.linkedin.com/>



Abstract

LinkedIn is a social media platform that most people have heard of but can be confusing to use. Applying for jobs using LinkedIn is the best because it shows how many people have applied for a position. It can be used for connections to potential employers that would be interested in hiring interns or full-time employees for a company. Developing a great profile is great to show your career achievements and others. Connecting with others on the application is also easy with the messaging system. When developing skills using many of the website tools above, it is best to start creating a profile here. Any college student should be here and applying for internships. Information technology work experience is important. It helps to stand out from others in the job market.

Tips for using LinkedIn:

- Develop a very professional image online using LinkedIn. When selecting a profile picture, make sure to wear professional clothing. This can be a suit and tie or a dress. Think of a profile picture of someone going to a job interview. How would they look?
- Make sure to add as much work experience as possible depending on a college major. For people just starting out, it is best to develop a profile based on any work experience. For someone working in a field like information sciences and technology, it is best to put down relevant work experience for a job that suits that field.
- List skills on a profile to stand out. There is a section to take knowledge tests to prove skills. These can include tests on structure query language or Java. Once passing the tests, these skills will stand out on a profile for others to see.
- LinkedIn Learning is great for professional development. There are many courses offered to improve job skills, especially in information sciences and technology. Make sure to take advantage of these. Many of them do cost money though.
- When starting a career, make sure to connect with people based on a job. Connecting can be helpful when searching for a new job or landing an internship. This can be previous employers or coworkers. Having a lot of connections on a profile shows how professional a profile is.

Government Publication

An Overview of Cloud Computing

<https://www.govinfo.gov/content/pkg/GPO-TNW-17-4-2009/pdf/GPO-TNW-17-4-2009-3.pdf>

Abstract

This government publication talks about the rapid development of cloud computing and how technology is evolving faster than ever before. Cloud computing is defined as using networks to store information instead of local servers. One example is how Google is one of the most powerful and rapidly growing technology companies in the world. Their approach to cloud computing was unique, where they used cheap computer cloud hardware that has a possibility of malfunctioning. However, there are multiple computers in a cluster that can take over the responsibility. The document also talks about other major technology companies and their approach to cloud computing. These include Amazon's AWS (which stands for Amazon Web Services), Microsoft's Azure, and other companies' attempts at cloud computing. These companies include Dell, IBM, and Oracle.

Tips for using this document (and cloud computing services):

- Cloud computing is important in information sciences and technology. Many companies need these services to control several buildings and employees. Be sure to research what each service does more outside of this resource and how companies use many of these cloud computing services.
- When using cloud computing services, there needs to always be an understanding of security, reliability, defense, vulnerability to attacks, and much more. Pages sixteen and seventeen describe these issues.
- This document has some user-friendly pictures and examples of what the structure of cloud computing looks like. Be sure to really analyze the photos and understand their meaning.
- Cloud computing services are helpful when storing all types of files. Google Workspace is a cloud computing service for productivity tools and file storage. Microsoft has Office 365, which is the same as Google Workspace. Use them to store important documents and files in the cloud instead of on a physical hard disk or solid-state drive.

Periodical Literature

Computing Power and the Governance of Artificial Intelligence

<https://arxiv.org/pdf/2402.08797.pdf>

Abstract

This very new and interesting article talks about how artificial intelligence is evolving. It talks about how it is starting to play a huge role in information technology roles and computer science roles, as well as playing a huge role in the growth and development of many companies. It is important to continue to learn about changes in technology, especially when beginning a new career. Here, it is described that artificial intelligence is changing the world, and it is growing at a rapid rate. The important thing to understand is ethics and rules regarding this modern technology. The document also goes into detail about how artificial intelligence works and what many countries are doing to develop new forms. There are also many mentions of how artificial intelligence implements modern computer hardware and software.

Tips for using this document:

- It is important to read this article as an information sciences and technology major. It also applies to anyone studying technology of any kind. This is because artificial intelligence is rapidly developing, and many people consider it to be the future. Many future jobs will involve AI.
- This document has a massive references section. All these references can be helpful for learning more about artificial intelligence. To access them, click on the link that is surrounded by a light blue box.
- The document has a few interesting diagrams to read and understand. Access some of them on page thirty-five, page forty-five, page sixteen, page twenty-one, page twenty-two, page twenty-three, and page nine.
- Ethics with artificial intelligence are important. This document goes into detail about how it can be dangerous or helpful to humanity. The document also describes how it can be helpful for information technology and business. This is in section three.

Professional Journal

The Role of Information Technology in the Organization: A Review, Model, and Assessment

Authors: Todd Dewett and Gareth R. Jones

<https://www.sciencedirect.com/science/article/pii/S0149206301000940>

(NOTE: To view the PDF file, please sign into the website with a college email address)

Abstract

This journal explains how information technology has grown to become necessary for companies to succeed in the world today. It talks about organizations and how most businesses rely on IT services like cloud computing to run their services. This journal goes into depth on how early information technology was implemented in businesses. During the 1960s and 1970s, information technology was not widely used. However, with the development of advanced computer systems later, technology became extremely important in the workplace. Technology was (and still is today) responsible for storing information about companies in databases. It also is the primary resource for communication with e-mail and messaging services. This article goes into detail about people who helped to develop this technology for these businesses. It is important to understand when starting a career in information sciences and technology.

Tips for using this document:

- From pages three-hundred and seventeen to three-hundred and twenty, there is a timeline of different actions and events in the information technology business world. It is in the 1990s and can be useful for understanding the history of this field. It is hard to read though because it is in a landscape format. Open it in a word document to change it.
- This document has tons of references at the end that can be helpful to check out. These are other journals and resources that can be helpful for understanding the workplace. This is for someone who is new to working in general.
- This resource is provided by Texas A&M University, which is a very widely known college. Make sure to check out their website here: <https://www.tamu.edu/index.html>