How to Make a Career in Data Science

A guide for working professionals

So you want to start your career in data science. There's probably a number of questions swirling in your mind ranging from "Is this the right career path for me?" and "Where do I learn the required skills?" to "There's so many courses available, what do I choose?". With this guide, we hope to answer some of your questions and nagging doubts and put your worries at rest.

As a working professional you may be wondering if it is even possible to make that career switch to data science. Fortunately the abundance of data science positions available today and the new positions opening up at a rapid pace mean that finding work as a data scientist is much simpler than it is for most other careers. In addition there are many courses available in the market both online and offline that one can enroll in today to start their journey into data science. We recommend that you join a course that is comprehensive, meaning it not only teaches the tools but the underlying statistics and that gives a set of real world corporate examples and projects to work on. Getting an internship is one of the easiest ways to start your machine learning careers today so joining a course that comes with an internship is a massive plus.

The Role

The short answer is data scientists work with data to answer questions.

While this might seem simple enough, the devil is in the details. The data scientist must analyse large volumes of data and draw meaningful conclusions from it while often not knowing what is required. Often the problem

statement is open ended and vague or the data itself is patchy doesn't lend itself to conclusions. A data scientist's job is to formulate problem statements, carry out statistical analysis, find trends and patterns in the data, draw meaningful and actionable conclusions and to present the findings and data in a useful manner.

You may notice that nowhere in the role description is a run down of the softwares or tools one must know to be a data scientist. That's because the tools are a means to an end. For example a data scientist may utilise machine learning to find a pattern and answer a question but a knowledge of machine learning tools does not make a data scientist.

Growing Popularity

Machine learning is the field to be in today. Hailed as the sexiest job of the 21st century, being a data scientist is one of the most secure careers you can pursue today. You may be wondering why is the machine learning boom happening today. Well the answer is a combination of algorithms developed for computer based intelligence in recent years, the availability of cheap (relatively) computing resources and the vast amounts of data that can be collected with the widespread prevalence of data. All of which make machine learning possible and necessary for companies to invest in today.

Just as electricity had transformed life some 100 years ago, followed by the sensational invention of the internet which had practically replaced traditional desk jobs with jobs that require the use of computers and the internet; machine learning is also bound to bring about a similar momentum in the human world when the pin finally drops and we are transported into a technology driven future.

> **"Machine Learning is the next internet"**
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> -Anthony Tether, Director, DARPA

It's just a matter of time before machine learning revolutionizes the world as we know it today and it takes over the job market. In fact, Data Scientist has already become one of the most trending and in-demand jobs of the 21st century. In the midst of all this growing need for machine learning professionals, where do you stand? And why should you learn machine learning?

“A Breakthrough In Machine Learning Would Be Worth Ten Microsofts!”

- Bill Gates, Founder, Microsoft

According to a report by Gartner, AI will create 2.3 million Machine Learning jobs by 2020. India is already facing a shortage of ML Experts today and the demand for these professionals is at an all-time high. Because there aren’t enough skilled professionals to match this soaring demand, machine learning has become a highly niche and well paid profession.

The Requirements

Simply put, data scientist must be proficient in mathematics, statistical analysis, computer science, logical reasoning, critical thinking and a continuously updating list of tools to wrangle data and analyse it.

You may have heard that data science is the domain of computer scientists or staticians alone and that is an urban legend with little basis in reality. Not only can anyone learn data science, we believe everyone should learn data science given the changing requirements of the job market and transformation brought about by machine learning.

There are many courses available online that you can enroll in to learn the various software and tools for data science. The popular courses will be covered in the following sections of this guide. In addition to those however, we believe that solving a good set of practical and real world problems is vital for anyone who wants to become a data scientist to have on their resume. It is important for budding data scientists to get the right exposure to real world problems in data science before they can start their career.

Courses

With the explosion in machine learning came the explosion in machine learning courses and books. It can be a daunting task to navigate through the plethora of resources available today and pick the right path for you. Below are some of the most popular options and our opinions on them:

Coursera - Machine Learning:

Probably the most popular online course for machine learning. It is taught by Andrew Ng, a professor at Stanford University and the cofounder of Coursera. The course is almost deceptively simple to begin with but gets very deep into machine learning theory as it progresses. While this is a good thing for computer science students looking to get into machine learning in depth, it probably isn't the best source for people who want to apply practical machine learning into their daily jobs and businesses. This is further evidenced by the videos of this course that are available on Youtube. The first lesson of the course has 240 thousand views at the time of writing but the last one has only 5 thousand. This indicates the dropout rate of the course.

Udacity - Machine Learning engineer:

Another very popular course and a very extensive one. This course is both rigorous and very in depth. It takes six months to complete at around thirty hours a month. It also requires a substantial amount of prerequisites in the form of programming and statistics knowledge as the course doesn't cover that. In out opinion this course is more suited to those who are certain they will build their career on being a data scientist. It is far too heavy and not immediately relevant to those who seek to apply machine learning to get immediate tangible benefits in their current job.

Pick a Certification that adds value to your career

The first step you should follow to become a Machine Learning Engineer involves something as basic as picking the right certification for you. You need to pick a certification that is best suited to your needs, something that adds value to your career.

Instead of working on machine learning projects like "the titanic prediction model" that will not advance your career; look for Certifications in Machine Learning which give you relevant projects to work on. Working on such projects will acquaint you with real life office problems as you will solve actual problems that companies face using your machine learning skills. Such projects are highly significant because it stands as a hallmark of your machine learning capabilities and dramatically increases your chance of getting employed by top companies.

Get certified from a recognized institute

When it comes to making decisions about the rest of your life, don't compromise. You will find free courses on machine learning online, but at the end of the day, someone who is certified from a reputed institute is always chosen over someone who has picked up their skills over the internet. An online course may cost you nothing, but it will also add no value to your career prospects. Gambling with your career over a few thousand rupees is just not worth it. Get certified and do so from a recognized institute.

Start your job application:

You can't become a Machine Learning Engineer if you don't apply for jobs. Lucky for you, the job market is ripe for Machine Learning Professionals and finding a job in Machine Learning is as smooth as running hot knife through butter.

While finding a job as a Machine Learning Engineer has become effortlessly easy due to its soaring demand, it is smart to not just be certified, but to be certified and have internship experience. Having an internship experience in machine learning would make your quest of becoming a Data Scientist ten times easier and sweeter.