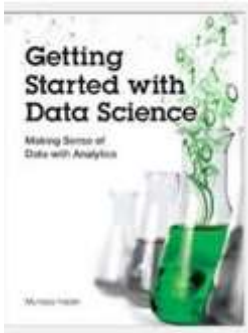**Course Text Book: 'Getting Started with Data Science' Publisher: IBM Press; 1 edition (Dec 13 2015) Print.**

Author: Murtaza Haider

Prescribed Reading: Chapter 1 Pg. 4

Data Science: The Sexiest Job in the 21st Century

In the data-driven world, data scientists have emerged as a hot commodity. The chase is on to find the best talent in data science. Already, experts estimate that millions of jobs in data science might remain vacant for the lack of readily available talent. The global search for skilled data scientists is not merely a search for statisticians or computer scientists. In fact, the firms are searching for well-rounded individuals who possess the subject matter expertise, some experience in software programming and analytics, and exceptional communication skills.

Our digital footprint has expanded rapidly over the past 10 years. The size of the digital universe was roughly 130 billion gigabytes in 1995. By 2020, this number will swell to 40 trillion gigabytes. Companies will compete for hundreds of thousands, if not millions, of new workers needed to navigate the digital world. No wonder the prestigious Harvard Business Review called data science **the sexiest job in the 21st century**.

A report by the McKinsey Global Institute warns of huge talent shortages for data and analytics. By 2018, the United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions.

Because the digital revolution has touched every aspect of our lives, the opportunity to benefit from learning about our behaviors is more so now than ever before. Given the right data, marketers can take sneak peeks into our habit formation. Research in neurology and psychology is revealing how habits and preferences are formed and retailers like Target are out to profit from it. However, the retailers can only do so if they have data scientists working for them. "For this reason, it is like an arms race to hire statisticians nowadays", said Andreas Weigend, the former chief scientist at Amazon.com.

There is still the need to convince the C-suite executives of the benefits of data and analytics. It appears that the senior management might be a step or two behind the middle management in being informed of the potential of analytics-driven planning. Professor Peter Fader, who manages the Customer Analytics Initiative at Wharton, knows that executives reach the C-suite without having to interact with data. He believes that the real change will happen when executives are well-versed in data and analytics.

SAP, a leader in data and analytics, reported from a survey that 92% of the responding firms in its sample experienced a significant increase in their data holdings. At the same time, three-quarters identified the need for new data science skills in their firms. Accenture believes that the demand for data scientists may outstrip supply by 250,000 in 2015 alone. A similar survey of 150 executives by KPMG in 2014 found that 85% of the respondents did not know how to analyze data. *Most organizations are unable to connect the dots because they do not fully understand how data and analytics can transform their business,* Alwin Magimay, head of digital and analytics for KPMG UK, said in an interview in May 2015.

Bernard Marr writing for Forbes also raises concerns about the insufficient analytics talent. *There just aren't enough people with the required skills to analyze and interpret this information-transforming it from raw numerical (or other) data into actionable insights-the ultimate aim of any Big Data-driven initiative,* he wrote. Bernard quotes a survey by Gartner of business leaders of whom more than 50% reported the lack of in-house expertise in data science.

Bernard reported on Walmart, which turned to crowd-sourcing for its analytics need. Walmart approached Kaggle to host a competition for analyzing its proprietary data. The retailer provided sales data from a shortlist of stores and asked the competitors to develop better forecasts of sales based on promotion schemes.

Given the shortage of data scientists, employers are willing to pay top dollars for the talent. Michael Chui, a principal at McKinsey, knows this too well. "Data science has become relevant to every company ... There's a war for this type of talent," he said in an interview. Take Paul Minton, for example. He was making $20,000 serving tables at a restaurant. He had majored in math at college. Mr. Minton took a three-month programming course that changed everything. He made over $100,000 in 2014 as a data scientist for a web startup in San Francisco. *Six figures, right off the bat ... To me, it was astonishing,* said Mr Minton.

Could Mr Minton be exceptionally fortunate, or are such high salaries the norm? Luck had little to do with it; the New York Times reported $100,000 as the average base salary of a software engineer and $112,000 for data scientists.