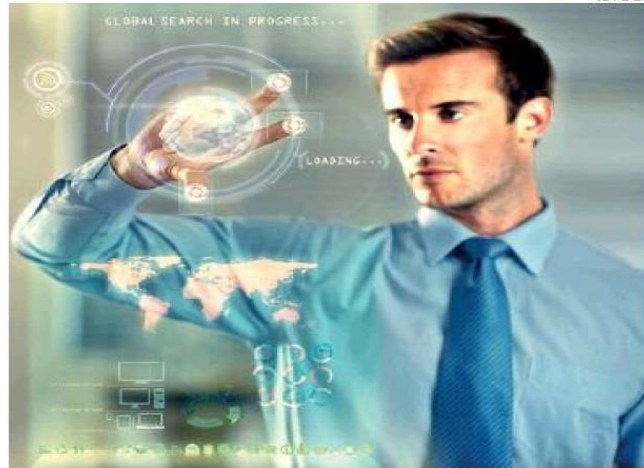# Exploring career options for Data Science graduates

Realising the importance that Data Science will play in future, B-schools have started offering a STEM classified Masters programme in analytics, writes **Abhijit Dasgupta**

Till 2018, in India and elsewhere, a degree programme in Data Science was only available at a graduate or masters level, primarily in the USA. Graduate students (Masters and PhD), over there, would be taking specialised courses on Big Data Engineering, Artificial Intelligence (AI), Machine Learning (ML), Data Mining, Statistics to gain an understanding of shifts in innovation that is getting powered by Data Science. Realising the importance that Data Science is going to play in future of the business in years to come, every top B-schools (mostly US universities) have started offering a STEM (Science Technology Engineering Mathematics) classified Masters programme in analytics.

The advent of big-4 (Google, Facebook, Microsoft, and Amazon), Apache Foundation and other open-source contributors changed the game and made Data Science as part of the everyday life of a professional.

This started sometime during early 2000 and gained traction after Google open-sourced its distributed computing framework (aka Hadoop), Stanford University open-sourced its distributed computing systems for large data sets (aka – Spark), Facebook open-sourced its columnar database systems allowing users to maintain a database of few Terabytes, Amazon made compute infrastructure very cheap through their AWS offering (around 2008).

The careers in Data Science are originating from four different but well-connected streams such as Computer Science, Statistics, Mathematics and Business Analytics. Data Science graduates can pursue career as Data Engineers, Data Scientists, Data Analysts, Software Engineers, Cloud Engineers, DevOps Engineers and Business Analysts. Traditionally, Data Engineers are pegged at high salary bracket.

Qualities that a company considers

Typically the qualities or qualifications that companies look at a recruit include Object Oriented Programming skills (Java / Python), Functional Programming skills (Java / Scala / Go), Top Coding skills (specifically data structures & algorithms) in any language, Good understanding of Probabilities and Statistics, Strong foundation of Mathematics, Optimisation, Distributed Computing and Operating systems, Machine Vision, Machine Intelligence packages.

Some understanding of Business Domain (eg Retail, Transportation, Healthcare, Finance etc.) which can be gained through capstone projects, dissertation, thesis etc can also help the candidate. It is unlikely to combine all the above qualifications, but certifications from AWS, Microsoft, Cloud Era, Oracle etc does help.

Course in Data Science

Many top B Schools offer undergraduate programmes on Data Science (Bachelor of Data Science).

The courses and topics of about 65% of the total course work are actually are from a typical Computer Science Master programme and therefore the rigour is unparalleled. The students typically benefit from the 2X or more salary differential and have a jump-start career; and in case, s/he is able to crack into the big league of Google, Amazon, FB, Microsoft, then this differential goes up to 5X at the start of the career.

Secondly, the graduates also get to work on the most happening technologies in the world thus improving their professional profile significantly.

(The author is director, Data Science Programmes, S P Jain School of Global Management)