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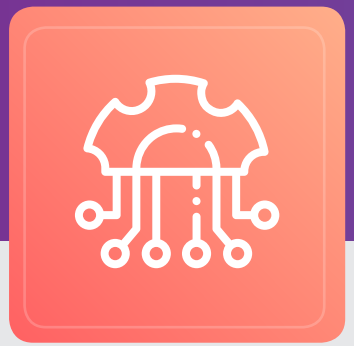
Edureka 2019 Tech Career Guide



YOUR PERSONALIZED ROAD-MAP TO A CAREER PATH IN

ARTIFICIAL INTELLIGENCE / MACHINE LEARNING

A report by Edureka

www.edureka.co

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TRENDING TECHNOLOGIES OF 2019

2019 began with a number of industry and career portals announcing survey results listing the most popular technologies in 2019 and their job outlook. We decided to test the sentiment on the ground and asked technology professionals spread across the globe, which job titles they aspire to land in the future. Around 500 technology professionals in various stages of their career answered our survey, and based on the results, these are the most-sought after technology jobs of 2019 as chosen by technology professionals.

AI / MACHINE LEARNING ENGINEER

DATA SCIENTIST

CLOUD ARCHITECT

BIG DATA ARCHITECT

HADOOP DEVELOPER / ADMIN

DEVOPS ENGINEER

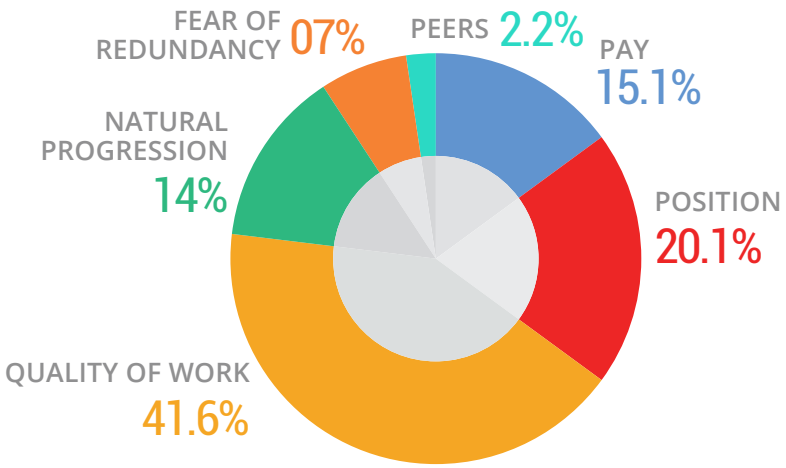
BLOCKCHAIN ENGINEER

CYBERSECURITY ENGINEER

MOTIVATION FOR CAREER UPGRADE

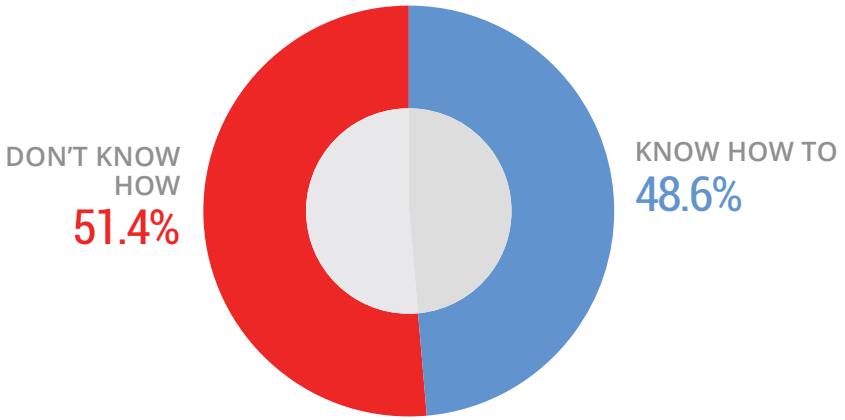
Before laying out the career paths for each sought-after technology job roles, let's try and understand the motivations of technology professionals to seek these job titles.

Our survey results showed that the primary motivation to seek jobs in future technologies is **improving the quality of their work and projects. Getting promoted to a better position at work and bagging a bigger paycheck** are the other prominent reasons techies said influenced their desire to upgrade to in-demand technology careers. Natural progression from their current roles, fear of redundancy, influence by peers were also quoted as reasons by technology professionals to move to in-demand technologies.



Motivation for career upgrade

We also asked the survey participants whether they knew how to bag the jobs that they were aspiring for. While a little more than 51% of them said that they don't know how to bag their dream job, 48.6% said they do know how to bag the job they were aspiring for. This is reflective of the IT industry where every technology professional wants a lucrative and rewarding job profile in a trending technology but more than half of them do not know how to achieve it.



Do they know how to bag their dream job?

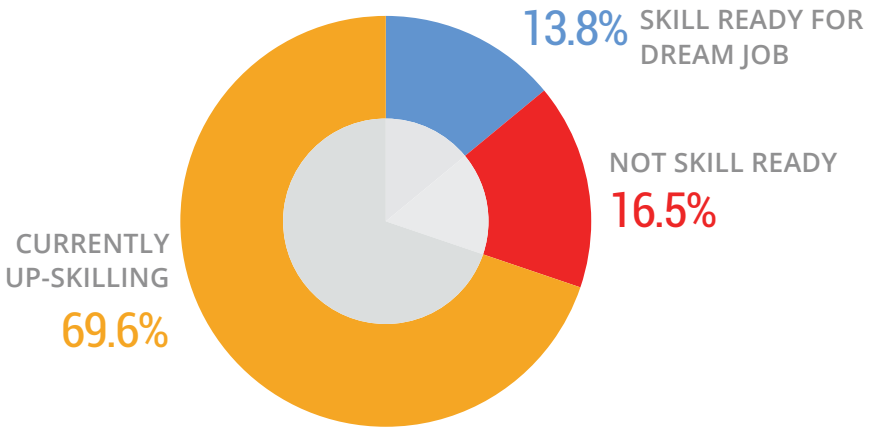
But, when the question came to skills to match the jobs the professionals were aspiring for, the survey results had a different albeit interesting story to tell.

- Only 13.8% of the surveyed technology professionals said they were skill-ready for their dream job.

- 16.5% of them said that they felt they were not skill-ready for the job they were aspiring for.

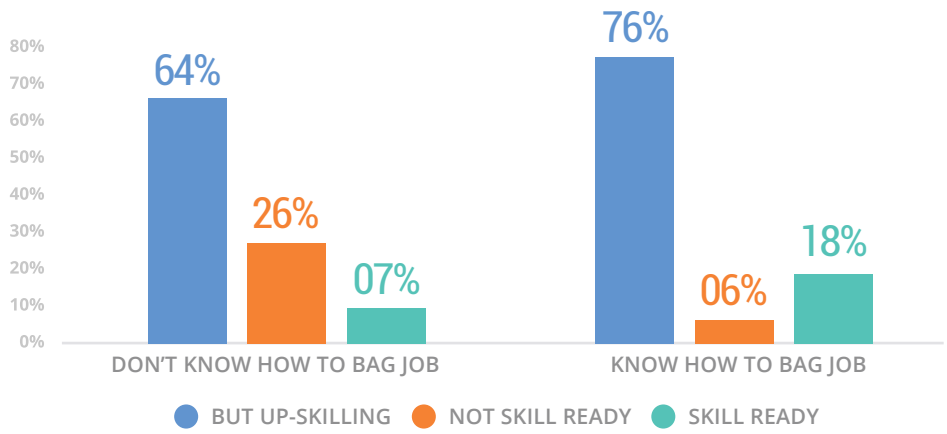
- But, what's more interesting is the fact that 69.6% of the survey participants said they were currently up-skilling for the job of their dreams.

We can safely conclude that awareness about the need to up-skill for jobs of the future is high enough among the IT workforce but **they are lacking a clear roadmap and learning path to the jobs of their future** as can be inferred from the previous chart .



Are professionals skill-ready for their dream job?

Significantly, majority of those who said that they know how to achieve the jobs they were aspiring for, have already up-skilled for it or are in the process of up-skilling. So up-skilling clearly plays a major role in knowing the learning path to ones dream career.



Skills Vs knowing how to bag their dream jobs

Up-skilling with future skills is no longer a choice for today's technology professional and in fact, a previous skill report by Edureka stated that a tech professional needs to up-skill 15-20 times in their career if they wish to stay relevant in today's competitive and ever-evolving IT industry. Professionals from all industries and experience levels are feeling the need to up-skill and expert-curated information - on which technologies to master, tools to learn and the correct learning path to follow - can go a long way in helping them up-skill for their dream jobs in a structured way.

The Edureka Tech Career Guide 2019 aims to provide this information by serving as a handy guide to those technology professionals who do not know the learning path to their dream career. It also aims to provide the recommended learning path to those who have already started their learning journey and provide course correction if needed.

CAREER PATH

MACHINE LEARNING ENGINEER

YOU ARE A

07 BI/DATA VISUALIZATION TOOLS

08 BIG DATA TOOLS

09 ML CLOUD PLATFORMS

ENDS

YOU ARE A

DATA SCIENTIST/AI ML ENGINEER

06 DEEP LEARNING

DEEP LEARNING LIBRARIES & DEEP LEARNING ALGORITHMS

05 MACHINE LEARNING

ML LIBRARIES & NON-ML LIBRARIES

01 MATHEMATICS & STATISTICS CONCEPTS

02 PROGRAMMING/ SCRIPTING LANGUAGE

03 DATABASE

04 MACHINE LEARNING ALGORITHMS

STARTS

AI & MACHINE LEARNING

01 02 03 04 05 06 07 08 09

MATHEMATICS & STATISTICAL CONCEPTS
Control Theory
Predictive Modelling
Resource Allocation Theory
Optimization Theory
Bayesian in Stats
Probability Distribution
Anomaly Detection
Cluster Analytics
Forecasting Analytics

PROGRAMMING/ SCRIPTING LANGUAGE
Python or R
Scala or Java
Bash Scripting
PowerShell

DATABASE

RDBMS
MySQL or
PostgreSQL or
Oracle DB

NoSQL Database
MongoDB or
Cassandra

MACHINE LEARNING ALGORITHMS
Linear/Logistic Regression
Decision Tree
Random Forest
Support Vector Machine (SVM)
Naive Bayes Classification
Ensemble Method
K-Means Algorithm
Fuzzy C Algorithm
Hierarchical Clustering Algorithm
Expectation-Maximisation Algorithm
Principal Component Analysis

MACHINE LEARNING USING PYTHON

5.1.1 **ML Libraries**
SKLearn
Scikit-learn
statModels
NLTK

5.1.2 **Non-ML Libraries**
Pandas
Scipy
Numpy
Matplot lib

MACHINE LEARNING USING R

Machine Learning Using R
E1071
Deplyr
Corrplot
Lattice
RPart
iGraph
Caret
MICE
RandomForest
Ggplot
Plotly

DEEP LEARNING

6.1 **Deep Learning Libraries**
TensorFlow
Keras
Pytorch

6.2 **Deep Learning Algorithms**
Multi-Layer Perceptron
CNN
RNN (LSTM)
ANN
Auto-Encoder
RBM

BI/DATA VISUALIZATION TOOLS
Tableau or
PowerBI or
QlikView

BIG DATA TOOLS
Hadoop
Spark
Hive

ML CLOUD PLATFORMS
AWS
or Google Cloud
or Azure

MACHINE LEARNING INDUSTRY OUTLOOK & OPPORTUNITIES

Machine Learning and AI have emerged as the hottest technologies to upskill in 2019. Machine Learning and AI Engineers are in high demand as industries across the spectrum, right from automobile, healthcare, education to financial services, start adopting AI. Even governments have woken up to this reality such as the Indian Government's decision to create a National Centre on Artificial Intelligence. This interest in AI and Machine Learning will give this technology a further impetus by getting more companies to adopt this technology into their products.

2.3 Million

The number of jobs expected to be created by AI in the coming years - As per Gartner

USD **8.81** Billion

Growth in Machine Learning Market size by 2022

*Source MarketsandMarkets

119% Annual Growth

Increase in job postings for AI & ML experts

Some Of The Companies Which Have Openings For ML Engineers

accenture

Microsoft

PayPal

Cerner

Cargill

Google

intuit

Walmart

AMERICAN EXPRESS

MACHINE LEARNING ENGINEER SALARY

IN: Rs **343,499** - Rs **2,004,987**

US: $**76,932** - $**152,703**

DATA SCIENTIST SALARY

IN: Rs **303,059** - Rs **1,794,271**

US: $**63,434** - $**127,852**

*Source Popular Job Portals

Resources to Get Started with Machine Learning

MACHINE LEARNING TUTORIAL:
https://youtu.be/YcUPVziBsMA

HOW TO BECOME A MACHINE LEARNING ENGINEER:
https://youtu.be/cA_94ewJloI

WHAT IS MACHINE LEARNING:
https://www.edureka.co/blog/what-is-machine-learning/

CAREER PATH TRAINING:
https://www.edureka.co/masters-program/machine-learning-engineer-training

ML ENGINEER OR DATA SCIENTIST LEARNING PATH

Skills not certificates are going to matter in the IT industry of the near future and it's especially true in the case of emerging technologies like Machine Learning where there aren't enough skilled technology professionals to fill the jobs that are lying vacant. Now that you know what is the exact learning and career path to follow in your quest to become a AI/ML Engineer or a Data Scientist, here is a learning hour guide to help you plan out your skilling journey. You can also get started with Machine Learning 101 with the help of the resources mentioned resources mentioned in the previous page.

MATHEMATICS & STATISTICS CONCEPTS - 27 hours

PROGRAMMING/ SCRIPTING LANGUAGE
Python or R - 35 hours
Scala or Java - 40 hours
Bash Scripting - 6 hours
PowerShell - 6 hours

DATABASE
RDBMS
MySQL or PostgreSQL or Oracle DB - 15 hours
NoSQL Database
MongoDB or Cassandra - 24 hours

MACHINE LEARNING ALGORITHMS
- 16 hours

Machine Learning using Python - 40 hours
or
Machine Learning using R - 40 hours - 40 hours

DEEP LEARNING - 40 hours

BI/DATA VISUALIZATION TOOLS - 30 hours

BIG DATA TOOLS
Hadoop - 40 hours
Spark - 40 hours
Hive -12 hours

ML CLOUD PLATFORMS
AWS
or
Google Cloud
or
Azure - 30 hours