CypherCreed's

Learning Path

Introduction to Data Science

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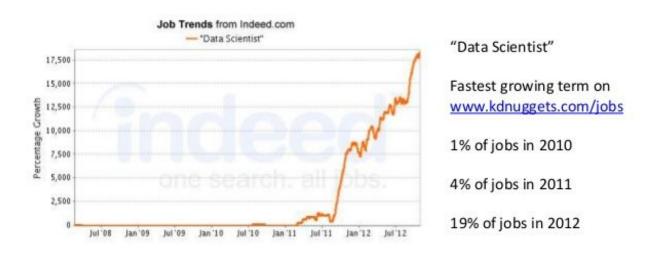
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Introduction:

Just like Batman doesn't need any intro, so, neither Data Science! *(pun intended!)*

Here are the following stats, enough to prove why Data Science is ***"Choco Lava"*** among the modern cutting-edge technologies:

➔ Data Scientist is rated the best job in America for 2017, with a median base salary of $110,000 (Source: Glassdoor).
➔ There are approximately 215,000 open job positions in Data Science (Source: Indeed.com).
➔ There are currently about 31,000 openings for Statistician positions in the US (Linkedin), offering an average salary of $77,000 (Glassdoor).

Demand for Data Scientists surging

Job Trends from Indeed.com
— "Data Scientist"

"Data Scientist"

Fastest growing term on www.kdnuggets.com/jobs

1% of jobs in 2010

4% of jobs in 2011

19% of jobs in 2012

Data Scientist – sexiest job of the 21st Century (???)
say Thomas H. Davenport and D.J. Patil, (HBR, Oct 2012)

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Motivation:

- [A Day In The Life Of A Data Scientist - *by Joma Tech*](#)
- Explore the course ***Careers in Data Science A-Z™*** - by *Kirill Eremenko (on Udemy)*
- [Read the writings of Manja Bogicevic on Medium](#)
- [Hacks for becoming a Top Data Scientist in 6 Months](#)

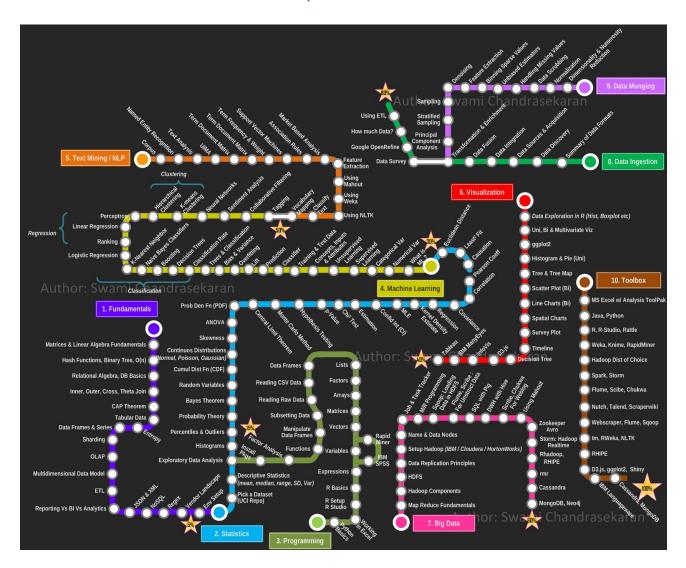Never miss the writings of **Kirill Eremenko** and **Hadelin de Ponteves** on **Medium>>**

- ❖ **[Kirill Eremenko - Medium](#)**

- ❖ **[Hadelin de Ponteves - Medium](#)**

- ❖ **[SuperDataScience Podcasts!](#)**

Join the **Official Community** of **Data Science** (and other related topics) and active **Data_Scientist_Quorans** on **Quora>>**

- ❖ **[Data Science Official](#)**
- ❖ **[Data Scientists](#)** --- **[Ask a Data Scientist (Space)](#)**
- ❖ **[Jobs and Careers in Data Science](#)**

- ❖ Read the answer of ***"Is there any data scientist who can share their story of becoming a data scientist that will be helpful for data scientist aspirants?"*** - by [Praveen Kumar Senapathy](#)
- ❖ **[Jalem Raj Rohit](#)** - Sr. Data Scientist - Episource
- ❖ **[Aditya Joshi](#)** - Data Scientist
- ❖ **[William Chen](#)** - Data Science Manager at Quora

Learning Path

Data Science Road-Map

**That amazing learning roadmap was drawn by *Swami Chandrasekaran* on his Blog!

**Link for the picture!

>>> The overall consequent learning roadmap of Data Science is driven by the following **Domains!**

[Note: Asterisk ("*") marked courses are mandatory and arranged in progressive order!]

[Note: All the contents in this Learning Roadmap are well arranged in moderate & progressive order!]

01. Fundamentals

★ **Basic Knowledge in Programming** (in C/C++/Java/Python)

★ **Learn Data Structures >>>**

- ○ ***Refer to CypherCreed's Data Structures & Algorithms Learning Roadmap!***

★ **Learn Database Management Systems (DBMS) >>>**

- ○ [In-depth theoritical concepts](#) - *NPTEL (IIT KGP)*

★ **Learn SQL >>>** *(Choose any one)*

- ○ [The Complete SQL Bootcamp](#) - *Jose Portilla*

- ○ [The Ultimate MySQL Bootcamp: Go from SQL Beginner to Expert](#) - *Colt Steele*

02. Probability and Statistics

1. **Learn Probability >>>** *(Choose any one!)*
   1.1. [Data Science: Probability](#) - *Harvard University (edX)*
   1.2. [Probability - The Science of Uncertainty and Data](#) - *MIT (edx)*
2. **Learn Statistics >>>** *(Choose any one!)*
   2.1. [Statistics for Data Science and Business Analysis](#) - *365 Careers Team*
   2.2. [Statistics for Business Analytics and Data Science A-Z™](#) - *SuperDataScience Team*
3. **Both Merged >>>** *(Choose any one!)*
   3.1. [Become a Probability & Statistics Master](#) - *Krista King*
   3.2. [Probability and Statistics for Business and Data Science](#) - *Udemy*

03. Programming

★ [Programming Skills, A Complete Roadmap for Learning Data Science](#) - *Rebecca Vickery*
★ Python >>> *Refer to CypherCreed's Python Programming Learning Path*
★ R >>> [R Programming A-Z™: R For Data Science With Real Exercises! - *Kirill Eremenko*](#)

04. Machine Learning & Deep Learning

★ ***Refer to CypherCreed's "Machine Learning" Learning Path!***
★ [Deep Learning A-Z™: Hands-On Artificial Neural Networks](#) - *Hadelin de Ponteves*

05. Natural Language Processing

★ [NLP - Natural Language Processing with Python](#) - *Jose Portilla (buy or wait for the torrent link*)
★ [Hands-on Natural Language Processing (NLP) Using Python](#) - *Next Edge Coding*

06. Data Visualization

★ [Tableau 10 A-Z: Hands-On Tableau Training For Data Science!](#) - *Kirill Eremenko*
★ [Tableau 10 Advanced Training: Master Tableau in Data Science](#) - *Kirill Eremenko*
★ [Colors for Data Science A-Z: Data Visualization Color Theory](#) - *buy this course on Udemy (or wait for the **torrent link!**)*

07. Big Data

★ [The Ultimate Hands-On Hadoop - Tame your Big Data!](#) - *Frank Kane*
★ [Big Data Computing](#) - *NPTEL NOC (only for in-depth knowledge)*

08. Data Scientist Toolbox (choose anyone!)

➔ [The Data Scientist's Toolbox](#) -   *Johns Hopkins University **(apply for F-Aid)***
➔ [Open Source tools for Data Science](#) - *IBM Research Team **(apply for F-Aid)***

09. Projects

1. **[Data Science Career Guide - Interview Preparation](#)** - *Jose Portilla*
2. [How to Use Git and GitHub](#) - *Udacity*
3. Open [Kaggle account](#) and start competing in Data Science!
4. [Python A-Z™: Python for Data Science with Real Exercises!](#) - *SuperDataScience Team*
5. **GitHub Repositories and Projects! >>>**
   - 5.1. [DataScience projects for learning](#) : *Kaggle challenges, Object Recognition, Parsing, etc.*
   - 5.2. [Awesome Data Science!](#)
   - 5.3. [Machine Learning / Deep Learning Cheat Sheet](#)
   - 5.4. [Oxford Deep Natural Language Processing Course Lectures](#)
   - 5.5. [Resources of NIPS 2017](#) - *(NIPS = annual conference specifically for Machine learning and Computational Neuroscience)*

6. **Open Source Softwares! >>>**

   - ➢ **[TensorFlow](#)** - *Open source library for numerical computation*
   - ➢ **[TuriCreate](#)** – *A Simplified Machine Learning Library*
   - ➢ **[OpenPose](#)** - *Multi-person keypoint detection library*
   - ➢ **[DeepSpeech](#)** - *Open source implementation of the state-of-the-art technique for Speech-to-Text synthesis by Baidu Research*
   - ➢ **[Mobile Deep Learning](#)** - *Developed by Baidu Research*
   - ➢ **[Visdom](#)** - *Open source library that supports broadcasting of plots, images, and text among collaborators*
   - ➢ **[Deep Photo Style Transfer](#)** - *Research paper that introduces a deep learning approach to photographic style transfer*
   - ➢ **[CycleGAN](#)** - *Open source powerful library which shows the potential of the state-of-the-art technique*
   - ➢ **[Seq2seq](#)** - *Machine Translation*
   - ➢ **[Pix2code](#)** - *Project, uses deep learning that attempts to automatically generate code for a given GUI*

>>> All-in-One Data Science Courses!

Udacity Nanodegrees >>>

➔ Udacity [Data Scientist Nanodegree](#) *(download for free!)*

Udemy Courses >>>

➔ [Data Science A-Z™: Real-Life Data Science Exercises Included](#) - *SuperDataScience Team*
➔ [The Data Science Course 2018: Complete Data Science Bootcamp](#) - *365 Careers Team*

edX Programs *(can choose anyone!) (enroll in each course in a program!)* >>>

❖ [Professional Certificate in Data Science](#) - *Harvard University*
❖ [MicroMasters Program in Data Science](#) - *University of California, San Diego*
❖ [Foundations of Data Science](#) - *Berkeley, University of California*
  ➢ [Data Science and Engineering with Spark](#) - *Berkeley, University of California*
❖ [Microsoft Professional Program in Data Science](#) - *Microsoft Research*
❖ [MicroMasters Program in Statistics and Data Science](#) - *MIT*

Coursera Specializations *(can choose anyone!) (apply for financial aid for each course in a specialization)* >>>

❏ [Data Science Specialization](#) - *Johns Hopkins University*
❏ [IBM Data Science Professional Certificate](#) - *IBM Research Team*
❏ [Applied Data Science with Python Specialization](#) - *University of Michigan*

Other Resources:

Books: Following Books are in Progressive order! *(If you wanna master the art of Data Science then complete each one by one in the given order!)* **(each book is available for download - here!)**

➔ **Think Stats** - *Allen B. Downey*

➔ **Bayesian Methods for Hackers** - *Cameroon Davidson-Pilon*

➔ **Understanding Machine Learning** - *Shai Shalev-Shwartz & Shai Ben-David*

➔ **The Elements of Statistical Learning** - *Jerome H. Friedman, Robert Tibshirani & Trevor Hastie*

➔ **An Introduction to Statistical Learning** - *Gareth James, Daniela Witten, Trevor Hastie & Robert Tibshirani*

➔ **A Programmer's Guide to Data Mining** - *Ron Zacharski*

➔ **Foundations of Data Science** - *Aviram Blum, John Hopcroft & Ravindran Kannan*

➔ **Mining of Massive DataSets** - *Jure Leskovec, Anand Rajaraman & Jeff Ullman*

➔ **Deep Learning (an MIT Press-Book)** - *Ian Goodfellow, Yoshua Bengio & Aaron Courville*

➔ **Machine Learning Yearning** - *Andrew NG*

Happy Learning & Happy analyzing!