## **Artificial Intelligence**

* **Mathematics**

**Textbooks:**

* Mathematics for machine learning - Marc Peter Deisenroth, A. Aldo Faisal, Cheng Soon Ong

<https://mml-book.github.io/>

* Linear Algebra Done Right by Axler

<https://linear.axler.net/>

**Courses:**

* Mathematics for Machine Learning Specialization – Coursera

<https://www.coursera.org/specializations/mathematics-machine-learning>

Calculus

* [Essence of calculus](https://www.youtube.com/watch?v=WUvTyaaNkzM&list=PLZHQObOWTQDMsr9K-rj53DwVRMYO3t5Yr) – 3Blue1Brown

<https://www.youtube.com/playlist?list=PLZHQObOWTQDMsr9K-rj53DwVRMYO3t5Yr>

* Calculus 1- khanacademy

<https://www.khanacademy.org/math/calculus-1>

Linear Algebra

* [Essence of linear algebra](https://www.youtube.com/watch?v=fNk_zzaMoSs&list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab) - 3Blue1Brown

<https://www.youtube.com/playlist?list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab>

* Linear algebra – khanacademy

<https://www.khanacademy.org/math/linear-algebra>

Statistics and Probability

<https://www.khanacademy.org/math/statistics-probability>

* **Python:**

**Textbook:**

* A Practical Introduction to Python Programming

<https://www.brianheinold.net/python/python_book.html>

**Courses:**

* Python for Everybody Specialization

<https://www.coursera.org/specializations/python>

* Crash Course on Python

<https://www.coursera.org/learn/python-crash-course>

* Statistics with Python Specialization

<https://www.coursera.org/specializations/statistics-with-python>

* **Machine Learning**

**Textbooks**

* + Elements of Statistical Learning by Tibshirani et al.  
    <https://web.stanford.edu/~hastie/ElemStatLearn/>
  + Pattern Recognition and Machine Learning, Bishop

<https://www.microsoft.com/en-us/research/people/cmbishop/prml-book/>

* + Stanford’s CS229 (Machine Learning) Course Notes

<http://cs229.stanford.edu/syllabus>

**Courses**

* + Machine Learning, Andrew Ng

<https://www.coursera.org/learn/machine-learning>

* + Machine Learning A-Z,

<https://www.udemy.com/course/machinelearning>

* **Deep Learning**

**Textbook**

* + Dive into Deep Learning

<https://d2l.ai/>

**Courses**

* + Deep Learning Specialization

<https://www.deeplearning.ai/program/deep-learning-specialization/>

* + Deep Learning A-Z

<https://www.udemy.com/course/deeplearning/>

* + MIT 6.S191 Introduction to Deep Learning

<http://introtodeeplearning.com/>

<https://www.youtube.com/playlist?list=PLtBw6njQRU-rwp5__7C0oIVt26ZgjG9NI>

* **Natural Language Processing**
  + Natural Language Processing Specialization – deeplearing.ai

<https://www.deeplearning.ai/program/natural-language-processing-specialization/>

* **Computer Vision**
  + CS231n: Convolutional Neural Networks for Visual Recognition

<http://cs231n.stanford.edu/>

* **For more practicing**

<https://www.fast.ai/>

* **TensorFlow Developer Professional Certificate**

<https://www.deeplearning.ai/program/tensorflow-developer-professional-certificate/>

* **TensorFlow: Data and Deployment Specialization**

<https://www.deeplearning.ai/program/tensorflow-data-and-deployment-specialization/>

* [**Reinforcement Learning Specialization**](https://www.coursera.org/specializations/reinforcement-learning)

<https://www.coursera.org/specializations/reinforcement-learning>

* **Data Science**
  + Database and SQL for Data Science - [https://bit.ly/2zUk0zL](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbjhMVjYtUXdseEV5TlZwNU9rdXQtT1JIYVNDUXxBQ3Jtc0tubGltQkx0VjN1aHZJQmFXYXBGM05BN0NKVHJ2QVF6NkN3QnN4ZGZvbmRtaWdfYTZkQkZYLVZEZXlGdXlJOFNFQ2kyNkxiNnB2UE9UVE51bmZtTzhUQS04RHBSRXB4djRfMzVJZV9fVTlCU3N5b2pGSQ&q=https%3A%2F%2Fbit.ly%2F2zUk0zL)
  + Introduction to Data Science - [https://bit.ly/32Nyj59](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbHJrNGpNU3lrdDBCRG02SDdtZl9hckhIbW5sQXxBQ3Jtc0trV2lTQ0xWa3F3aHhOMG1acmk0Q0NLcl9OS1N3X0FONkNlbWtGUENkVUpRblV1UmRLSVFEWEs4RDhzYWF0Z1VaY0hYWEVYc3o4aXhGRWhnbndPLVV0Ym56SHEzR2h6MkNmbmNXdEpLQnRpWlBFcXBaWQ&q=https%3A%2F%2Fbit.ly%2F32Nyj59)
  + Tableau Data Visualization - [http://bit.ly/3jc74aW](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbjYtTkdWVEpMaTdCRjIyb3NsLWNqbDI2bEt0QXxBQ3Jtc0tuSGVsbGZqZ3YtODZDeE8zanM5bV9VNGF2cUQzSDBCNU1rN0JNR2VzY2FiV3c2c0hMeFBDSDFQNXkwOENLcWFybENyZnJEdXRZZFduTkhhdE03ZlduXzFSMW8yUkEwcGZGVzFSOTFvVFdMbXJSeDhzUQ&q=http%3A%2F%2Fbit.ly%2F3jc74aW)
  + Data Analytics with Excel - [https://bit.ly/2FYnZOY](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbDNhaFl6bnBWbzQ1blRkbVlDOXdTeFY0M2FpZ3xBQ3Jtc0tsMjFWTHVWS0ZDT1JHRjJWcUFvWmY1UDAyaG9EQUVzYjFRMjg5SW14VGo2SzlNcFhZeUhEZi1nR1dyNzhWSk9CN1RaN2praC1jLVdXWjNMZV9FOXcyZ2JrcUVTX3R5Z1F2RnkzVzczT0lXT01xdEtzaw&q=https%3A%2F%2Fbit.ly%2F2FYnZOY)
  + Python for Everybody - [https://bit.ly/3j2HPqH](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbjBCbFEwdVRHcjZpT25vdmJ0V3RlRFF5RlM5QXxBQ3Jtc0ttWG5UUUpkNjljZ2h2TmVfbGhNMG9UWTBsZEZqbUpOU09nOFJ0VzlyTUpQVWV4a0ctdzdjdG9iTmptbmpHekphNlVZMDVhdjJSWVBjcF9xTkltUW9Ic1hRMk1uejFLZS1mVFNWVlF0UVRRbXlNYW1odw&q=https%3A%2F%2Fbit.ly%2F3j2HPqH)
  + Crash Course on Python - [https://bit.ly/2RIMqm7](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbXBQMEVjLXBJeHVvdVVaOVk4bnc0QmRlRlRFQXxBQ3Jtc0tuNTNMbFItV3htZXptcUE3Mlo4emJWU240RVFRa0JPOEhQUnFZNHlfV1FkcTMteGR3czZrTXFNd0hSOTZ3Nk54aENBTGx6ekpfUGQwUmR4cFRybGdOaFdGMHgxeEJwRXZVX3BESkVtU0ttV0pOQS1zaw&q=https%3A%2F%2Fbit.ly%2F2RIMqm7)
  + Data Analysis with Python - [https://bit.ly/3geiVDG](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbmN3RzZrNW5YZDN4dkJWMnh4TmVqUm94SGRyUXxBQ3Jtc0trVVV4Zk95N0pZQjZLRzhGcW4wRGJ5bVJ0QWljTmJSZWVwM0NzMk1zLXRCclhfNVlBN1RjMTh2bDNxenU0QnNjbnFfVjZLN1FTcnFiODlkUmN6TkZGV2M3WE1sT2xxelozbldwd0U2V0RlMkZQWUIzZw&q=https%3A%2F%2Fbit.ly%2F3geiVDG)
  + AWS Fundamentals - [https://bit.ly/35PUhq9](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqa3JEWXZGUFRnZGlHM1V3NDBoak93TndPWlpRd3xBQ3Jtc0tuYUtHVndrb2U0blQ0Y3AzQUtKQ05jRm5vbXJoeEpYRV9YTXk1N0FPNXM5cy05Yl9IWVRrbzA5cWFqT0F5aV9acC1QZGhYbFlucEttNlJYN0E0NDVOcXN3UjJocmFSb1p1emJWLVVYYUJmdThvQnRxcw&q=https%3A%2F%2Fbit.ly%2F35PUhq9)
  + Getting Started with Azure - [https://bit.ly/35UZU6f](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbGNHdVpkN084SnkzUkpWelUtOEF0X3hHZm90Z3xBQ3Jtc0tuWmVtNC02NDJ1dG82VHhtb2lmaHZuc0JWWmV6YzBaSXIzSExOcC1kMVI3OE1RemJxd3NpdFZ5QktUOTJKODdINi1mRzRnS25iRzZqcmpfWUQtbmhZZmJsMnFaQU5Yb0J5TkRCS1QyTjJMbW1CZUxZSQ&q=https%3A%2F%2Fbit.ly%2F35UZU6f)
  + Data Analysis and Presentation Skills - [http://bit.ly/2YFyuwx](https://www.youtube.com/redirect?event=video_description&redir_token=QUFFLUhqbmVxam1PTzRWSGo3ajlUSDJvOFNGdnJ4Wl9mQXxBQ3Jtc0tsSkJocFd4Qm9mSG9wN0JoZ25oM2R2WTRYSXRaUkptT09RZDRxLW9DLVFFQ2cwWUdfdW1RTmJnYUdLTlZzekZCcmhLMnJvRzVESTRSYzBpbndkNVRBMHRVVnRrQW85Z2pUak1zWndoSlh0MXRQR19DMA&q=http%3A%2F%2Fbit.ly%2F2YFyuwx)