

”

SUMMER OF SCIENCE-MACHINE LEARNING

Simran Sinha

I want to emphasize that you have the freedom to shape your project according to your interests and goals. To assist you in designing your project, I will provide you with a range of resources. Please note that these are meant to serve as a starting point, and you are encouraged to explore beyond these resources based on your individual preferences and learning style.

1 Resources

- Hands-on Machine Learning with Scikit-Learn, Keras & TensorFlow(Basic fundamental textbook)
- Pattern Recognition and Machine Learning (Supplementary literary resource)
- Videos on ML by Andrew Ng(if watching lectures proves to be conducive to accelerated and efficient learning for you)
- ML by geeksforgeeks (In the event that you find conventional book reading tedious, a more simplified presentation of concepts and a thorough breakdown of topics can serve as an alternative approach to enhance your understanding.)
- Mathematics for Machine Learning (Comprehensive Mathematical Foundation for Machine Learning)
- Deep Learning (Adaptive Computation and Machine Learning series)(covers the mathematical aspects of neural networks)
- Understanding Machine Learning:From Theory to Algorithms(Bridging the Gap Between Machine Learning Theory and Practical Algorithms)
- A Few Useful Things to Know About Machine Learning (Optional reading)

2 Prerequisites

- Familiarity with linear algebra concepts: vectors, matrices, matrix operations, and eigenvalues/eigenvectors
- Understanding of calculus: differentiation, integration, and optimization
- Basics of probability theory
- Python programming language (Indispensable for concurrent coding endeavors)
- Latex (Imperative for seamless document preparation, given that all your submission materials necessitate the utilization of LaTeX)

3 Requirement

To ensure your progress, I have implemented a weekly update requirement. Every Saturday, I kindly request that each student submits a brief update summarizing their activities, progress, and any challenges encountered during the week in any format (even a whatsapp text suffices, but it is a must).

The purpose of these weekly updates is two-fold. First, they allow me to stay informed about your individual journeys. Second, they provide you with an opportunity to reflect on your progress, set goals for the upcoming week (mostly helping you keep up with your PoA), and seek assistance if you are facing any roadblocks.