

1 Probability theory

1.1 Origin

This section is based on concept of **probability as extended logic** developed by (professor of physics) Edwin Thompson Jaynes and described in his book Probability Theory: The Logic of Science cited in books like Machine Learning A Probabilistic Perspective (Kevin P. Murphy) and Deep Learning (I.Goodfellow, Y.Bengio and A.Courville)

In this book E.T. Jaynes derives the probability theory **from natural logic rules present in our (i.e.human) reasoning process**. These rules are translated to mathematical theory by very thorough chain of arguments. Non of the question, the reader could have, is left without appropriate comment. Note that the theory is consistent with the one based on the set and measure theory **but** gives much more deeper insight to the principles behind the math. Moreover, the principles used are very tightly related to the subject of machine learning in general and deep learning in particular.

E.T.Jaynes approach somehow resembles me The Feynman Lectures of Physics where the understanding of ideas is more important than mathematical formulas.