

This text is a simple tutorial of a basic Artificial Neural Network, with worked examples in *Python*, so that anyone can read this text and gain the skills necessary to:

- Perform research of new and exciting literature in ML.
- Apply their *Python* skills to a problem in their field of work.

Features that distinguish this text from others:

- The text gives a balanced treatment to both the traditional and newer methods. The notation and analysis is developed to be consistent across the methods.
- From the beginning and consistently throughout the text, example problems are formulated and solved to develop an understanding of the equations and their application to Neural Networks. By highlighting this throughout, it is hoped that the reader will more fully understand and appreciate theory behind Neural Networks.
- There is an extensive treatment of modern methods, including numerically fast solutions systems of equations.

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a Monograph

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