Chapter THREE Generative Models

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The notes is mainly based on the following books:

- Understanding Machine Learning: From Theory to Algorithms, Shai Shalev-Shwartz and Shai Ben-David, 2014 [1]
- Pattern Recognition and Machine Learning, Christopher M. Bishop, 2006 [2]
- Probabilistic Graphical Models: Principles and Techniques, Daphne Koller and Nir Friedman, 2009 [3]
- Graphical Models, Exponential Families, and Variational Inference, Martin J. Wainwright and Michael I. Jordan, 2008 [4]

This part corresponds to **Chapter 24, 31 in UML, Chapter ? in PRML, Chapter ? in PGM**, and mainly answers the following questions:

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[1] https://www.cs.huji.ac.il/s̃hais/UnderstandingMachineLearning/understanding-machine-learning-theory-algorithms.pdf
[2] http://users.isr.ist.utl.pt/w̃urmd/Livros/school/Bishop - Pattern Recognition And Machine Learning - Springer 2006.pdf
[3] https://mitpress.mit.edu/books/probabilistic-graphical-models
[4] https://people.eecs.berkeley.edu/w̃ainwrig/Papers/WaiJor08_FTML.pdf

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Chapter 4. Linear models, perceptron, MLP, deep learning, Generalization bounds on deep learning.