

# Neuro-Dynamic Programming

This repository is a collection of reading notes for the book [Neuro-Dynamic Programming](#) by Dimitri Bertsekas and John Tsitsiklis. Notes are provided as handwritten pdf files on a per-chapter basis. Following is the detailed outline of this repository-

## Chapter-1: Introduction

Section	Description	Notes
1.1	Cost-to-go Approximations in Dynamic Programming	<a href="#">here</a>
1.2	Approximation Architectures	<a href="#">here</a>

## Chapter-2: Dynamic Programming

Section	Description	Notes
2.1	Introduction	<a href="#">here</a>
2.2	Stochastic Shortest Path Problems	<a href="#">here</a>
2.3	Discounted Problems	<a href="#">here</a>
2.4	Problem Formulation and Examples	<a href="#">here</a>

## Chapter-3: Neural Network Architectures and Training

Section	Description	Notes
3.1	Architectures for Approximation	<a href="#">here</a>
3.2	Neural Network Training	<a href="#">here</a>

## Chapter-4: Stochastic Iterative Algorithms

Section	Description	Notes
4.1	The Basic Model	<a href="#">here</a>
4.2	Convergence based on Smooth Potential Function	<a href="#">here</a>
4.3	Convergence under Contraction or Monotonicity	<a href="#">here</a>
4.4	The ODE Approach	<a href="#">here</a>

## Chapter-5: Simulation Methods for Lookup Table Representations

Section	Description	Notes
5.1	Some Aspects of Monte Carlo Simulation	<a href="#">here</a>
5.2	Policy Evaluation by Monte Carlo Simulation	<a href="#">here</a>

Section	Description	Notes
5.3	Temporal Difference Methods	<a href="#">here</a>
5.4	Optimistic Policy Iteration	<a href="#">here</a>
5.5	Simulation-Based Policy Iteration	<a href="#">here</a>
5.6	Q-Learning	<a href="#">here</a>

## Chapter-6: Approximate Dynamic Programming with Cost-to-Go Function Approximation

Section	Description	Notes
6.1	Generic Issue- From Parameters to Policies	<a href="#">here</a>
6.2	Approximate Policy Iteration	<a href="#">here</a>
6.3	Approximate Policy Evaluation using TD( $\lambda$ )	<a href="#">here</a>