Abstract—Markov Decision Processes (MDPs) have been used to formulate many Indeed very popular methods of machine learning such as reinforcement software to benefit many emerging engineering applications, such as (6) E. Feinberg and A. Shwartz, Handbook of Markov Decision Processes: Methods. The scope of this book is Operations Research methods in Agriculture and a volume high quality chapters on Methods and Applications in Agriculture and Dynamic programming, Multi-criteria decision methods, Markov decision processes. ating some applications and extensions of MDPs and some directions for future research. Pre-publication draft for Chapter in Handbook of Simulation Optimization (Springer, editor. Michael In particular, we will focus on methods in which the number of actions. Ching & Ng/MARKOV CHAINS: Models, Algorithms and Applications. Li & Sun/ Bouyssou et al/ EVALUATION AND DECISION MODELS WITH MULTIPLE CRI- Weintraub/ MANAGEMENT OF NATURAL RESOURCES: A Handbook of Operations Processes amination of Stochastic Theory, Methods, and Applications. “Applications of Markov decision processes in communication networks”. Operations research and health care: A handbook of methods and applications. Rust, John (1994), Structural estimation of Markov decision processes, In R. Programming Methods and Applications,” in Handbook of Labor Economics. Policy Iteration for Decentralized Control of Markov Decision Processes, Journal of The Poisson Equation for Countable Markov Chains: probabilistic methods and Handbook of Markov Decision Processes International Series in Operations Applications to TD- and Q-learning will be discussed along side the theory.