



Value-Based Planning for Teams of Agents in Stochastic Partially Observable Environments

By Frans Adriaan Oliehoek

Vossiuspers UvA. Paperback. Condition: New. 222 pages. Dimensions: 9.1in. x 6.1in. x 0.7in. A key requirement of decision support systems is the ability to reason about uncertainty. This is a complex problem, especially when multiple decision makers are involved. For instance, consider a team of fire fighting agents whose goal is to extinguish a large fire in a residential area using only local observations. In this case, the environment is stochastic because the agents may be uncertain with respect to: 1) the effect of their actions, 2) the true state of the environment, and 3) the actions the other agents take. These uncertainties render the problem computationally intractable. In this thesis such decision-making problems are formalized using a stochastic discrete-time model called decentralized partially observable Markov decision process (Dec-POMDP). The first part of this thesis describes a value-based (i. e. based on value functions) approach for Dec-POMDPs, making use of Bayesian games. In the second part, different forms of structure in this approach are identified and exploited to realize better scaling behavior. This item ships from multiple locations. Your book may arrive from Roseburg,OR, La Vergne,TN. Paperback.



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