



## Regret Analysis of Stochastic and Nonstochastic Multi-armed Bandit Problems (Paperback)

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Now Publishers Inc, United States, 2012. Paperback. Condition: New. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*. A multi-armed bandit problem - or, simply, a bandit problem - is a sequential allocation problem defined by a set of actions. At each time step, a unit resource is allocated to an action and some observable payoff is obtained. The goal is to maximize the total payoff obtained in a sequence of allocations. The name bandit refers to the colloquial term for a slot machine (a one-armed bandit in American slang). In a casino, a sequential allocation problem is obtained when the player is facing many slot machines at once (a multi-armed bandit ), and must repeatedly choose where to insert the next coin. Multi-armed bandit problems are the most basic examples of sequential decision problems with an exploration-exploitation trade-off. This is the balance between staying with the option that gave highest payoffs in the past and exploring new options that might give higher payoffs in the future. Although the study of bandit problems dates back to the 1930s, exploration-exploitation trade-offs arise in several modern applications, such as ad placement, website optimization, and packet routing. Mathematically, a multi-armed bandit...



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