Abstract

Soft computing is a synergistic combination of artificial intelligence methodologies to model and solve real-world problems that are either impossible or too difficult to model mathematically. Furthermore, the use of conventional modeling techniques demands rigor, precision and certainty, which carry computational cost. On the other hand, soft computing utilizes computation, reasoning and inference to reduce computational cost by exploiting tolerance for imprecision, uncertainty, partial truth and approximation. In addition to computational cost savings, soft computing is an excellent platform for autonomic computing, owing to its roots in artificial intelligence. Wireless communication networks are associated with much uncertainty and imprecision due to a number of stochastic processes such as escalating number of access points, constantly changing propagation channels, sudden variations in network load and random mobility of users. This reality has fuelled numerous applications of soft computing techniques in mobile and wireless communications. This paper reviews various applications of the core soft computing methodologies in mobile and wireless communications.

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Index Terms

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