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Topics

1. Overview of Social and Information Network Analysis and Machine Learning
2. Graph Theory
3. Social Networks
 - The Structure of a Network
 - How to Characterize a Network Structure
 - The Small-World Phenomenon
 - Strong and Weak Ties
 - Positive and Negative Relationships
4. Information Networks
 - Search Engines
 - Link Analysis and Web Search
 - The HITS Algorithm - Link Analysis using Hubs and Authorities
 - The PageRank Algorithm
5. Linear Regression
6. Logistic Regression
7. Naïve Bayes
8. Neural Networks
9. Deep Learning
10. Support Vector Machines and Kernel Functions
11. Semi-Supervised Learning (SSL)
 - Expectation-Maximization for SSL
 - Self-Training
 - Co-Training