## Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering

Part of the Advances in Computational Intelligence and Robotics Book Series

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## **Description:**

The disciplines of science and engineering rely heavily on the forecasting of prospective constraints for concepts that have not yet been proven to exist, especially in areas such as artificial intelligence. Obtaining quality solutions to the problems presented becomes increasingly difficult due to the number of steps required to sift through the possible solutions, and the ability to solve such problems relies on the recognition of patterns and the categorization of data into specific sets. Predictive modeling and optimization methods allow unknown events to be categorized based on statistics and classifiers input by researchers.

The Handbook of Research on Predictive Modeling and Optimization Methods in Science and Engineering is a critical reference source that provides comprehensive information on the use of optimization techniques and predictive models to solve real-life engineering and science problems. Through discussions on techniques such as robust design optimization, water level prediction, and the prediction of human actions, this publication identifies solutions to developing problems and new solutions for existing problems, making this publication a valuable resource for engineers, researchers, graduate students, and other professionals.

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## **Topics Covered:**

- Artificial Neural Network Use
- Degradation-Based Modeling
- Hybrid Models
- Multiscale Modeling

- Particle Swarm Optimization
- Robust Design Optimization
- Slope Stability Analysis
- Water Level Prediction

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