
# Data-Driven Decision Making under Uncertainty Integrating Robust Optimization with Principal Component Analysis and Kernel Smoothing Methods

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## Highlights

- A novel data-driven robust optimization framework is developed.
- A systematic way to derive data-driven polyhedron uncertainty sets is proposed.
- The power of PCA and kernel smoothing methods is leveraged for decision making.
- The proposed framework includes both static and adaptive robust optimization.
- Innovative applications on process control and operations under uncertainty.