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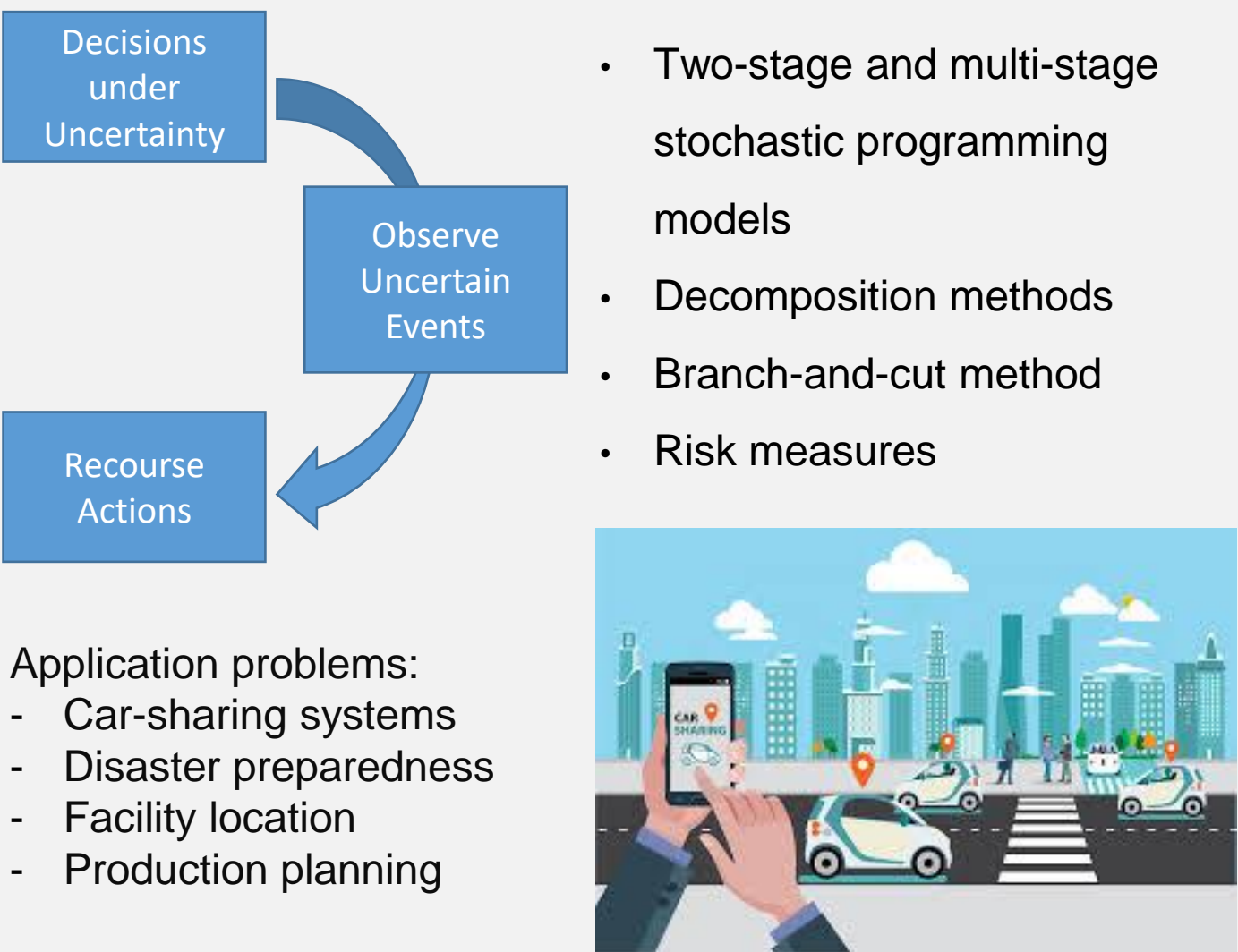
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Stochastic Programming  
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Production Planning  
Location and Transportation

# Advanced Optimization Methods and Applications

## Optimization under Uncertainty



## Optimization of Shared Mobility Systems



- Location and fleet sizing problems in car-sharing systems
- Rebalancing and routing problems in bike/scooter sharing systems
- Maintenance related problems in shared mobility systems
- Network optimization problems

## Production Planning

Lot sizing problem and its variations

- Carbon emission constraints
- Nonlinear cost functions
- Uncertainty in problem parameters

Solution Methods:

- Branch-and-cut
- Dynamic programming

