

Decision Analysis Fundamentals

Introduction to decision analysis

- What makes a good decision?
- History of decision analysis
- Problem solving
- Creative thinking
- Data science vs decision analysis
- Bulletproof Problem Solving
- OODA loop
- Conducting research

Uncertainty

- Definition and categorization
- Thinking probabilistically
- Expected value
- Visualizing uncertainty
- Utility curves
- Psychological biases

Statistical modelling and inference

- Correlation
- Regression
- Monte Carlo methods

Evaluating options

- Forced ranking
- Decision matrices

- Multi-criteria decision analysis Decision trees

Forecasting

- Time series
- Expert judgement
- Prediction markets
- Scenario planning

Interactive decision-making

- Stakeholder analysis
- Game theory
- Confrontation analysis

Systems thinking

- Feedback loops
- Influence diagrams
- System dynamics
- Strategy mapping

Group decision making

- Wisdom of crowds
- Delphi method
- Voting