

Spis treści

1 Introduction	9
<i>BOGUMIŁ KAMIŃSKI</i>	
<i>MICHAŁ JAKUBCZYK</i>	
<i>PRZEMYSŁAW SZUFEL</i>	
2 Fundamentals	15
<i>PRZEMYSŁAW SZUFEL</i>	
2.1 Building your first tree	15
2.1.1 Software requirements	15
2.1.2 First steps	17
2.1.3 Important notes	23
2.1.4 Shortcuts for creation of a decision tree	24
2.2 SilverDecisions: Tips & Tricks	25
2.2.1 SilverDecisions application settings	25
2.2.2 Tree branch folding	30
2.2.3 Optimization modes	30
2.2.4 Saving and exporting a decision tree	31
2.2.5 Tree details	32
2.2.6 Managing tree edit process	33
2.2.7 Context menu actions	33
2.2.8 Layout options	34
2.3 Working with variables and functions	34
2.3.1 Working with variables	35
2.3.2 Name scopes	38
2.3.3 Variable types	40
2.3.4 Functions	42
2.3.5 Text interpolation	43
3 Mathematical foundations of decision trees	49
<i>BOGUMIŁ KAMIŃSKI</i>	
<i>PAWEŁ PRAŁAT</i>	
3.1 Formal model of a decision tree and associated payoffs	50
3.1.1 Decision trees	50
3.1.2 Payoffs	54
3.2 Introduction to Monte Carlo simulation	60
3.2.1 Example decision tree	61
3.2.2 Theoretical foundations of probabilistic sensitivity analysis	64
3.2.3 Estimation of statistical parameters	69
3.2.4 Common Random Numbers	71
3.3 Sensitivity analysis of decision trees	72

4 Advanced topics	83
<i>MICHAŁ JAKUBCZYK</i>	
4.1 The value of real option & of information	83
4.1.1 The value of real option	84
4.1.2 The value of perfect information	87
4.1.3 Imperfect information, working with conditional probabilities	90
4.2 Multiple criteria	96
4.2.1 Defining the problem with two criteria	96
4.2.2 Interpreting the league table	98
4.2.3 Interpreting the CE-plane	103
4.3 Discounting	104
4.3.1 Standard (exponential) discounting	105
4.3.2 Hyperbolic discounting and time inconsistency	107
4.3.3 Discounting in two-criteria problems	110
5 Case studies	115
<i>CARMINE SPAGNUOLO</i>	
<i>MARIA ANGELA PELLEGRINO</i>	
<i>ALESSIA ANTELMi</i>	
<i>DANIEL KASZYŃSKI</i>	
5.1 Social impact of epidemic control strategies	116
5.1.1 Investing in a tracing application	118
5.1.2 The impact of lockdown policies	119
5.2 Banana trees	121
5.3 Machine rental	124
5.4 Transport company	124
5.5 Sale of cosmetics	126
6 Concluding remarks	129
<i>BOGUMIŁ KAMIŃSKI</i>	
<i>MICHAŁ JAKUBCZYK</i>	
<i>PRZEMYSŁAW SZUFEL</i>	
A Random distributions available in SilverDecisions	131
<i>PRZEMYSŁAW SZUFEL</i>	
B SilverDecisions quick user reference	135
<i>PRZEMYSŁAW SZUFEL</i>	