Steer your Mind

Abro, A.H.

2017

document version
Publisher's PDF, also known as Version of record

Contents

Part I: Introduction **01**

Chapter 1: Introduction **03**

1 Introduction 03

2 Motivation 04

3 Domain Addressed 08

4 Research objective 13

5 Computational Cognitive Modelling 21

6 Research Methodology 23

7 Formalization approach 24

8 Thesis Overview 26

9 Personal contribution to each chapter 32

Part II: Modelling Emotion and Mood Regulation **41**

Chapter 2 - Modelling the Effect of Regulation of Negative Emotions on Mood **43**

1 Introduction 44

2 Background on emotion regulation and mood dynamics 45

3 Integrated Model 49

4 Simulation Results 52

5 Discussion 62

6 Conclusion 62

Chapter 3 – A Computational Cognitive Model Integrating Different Emotion Regulation Strategies **67**

1 Introduction 68

2 Background 69

3 Cognitive Model 73

4 Simulation Experiments and Results 78

5 Conclusion 82

Chapter 4 – Monitoring the Impact of Negative Events and Deciding about Emotion Regulation Strategies **87**

1 Introduction 88

2 Neurological Background 98

3 The Cognitive Model 90

4 Scenarios and Simulation Results 95

5 Discussion 100

Part III: Modelling Desire Generation and Regulation Mechanisms 105

Chapter 5 – Doubting What to Eat: A Computational Model for Food Choice Using Different Valuing Perspectives **107**

1 Introduction 108

2 Background 108

3 The Computational Model 110

4 Scenarios and Simulation Results 115

5 Conclusion 118

Chapter 6 – A Cognitive Agent Model for Desire Regulation Applied to Food Desires **123**

1 Introduction 124

2 A Cognitive Agent Model for Desire Regulation 125

3 Simulation Results 131

4 Conclusion 133

Chapter 7 – A Computational Cognitive Model of Self-Monitoring and Decision Making for Desire Regulation **137**

1 Introduction 138

2 Background 139

3 Conceptual Representation of the Model 141

4 Simulation Results 147

5 Conclusion 149

Part IV: Modelling Socially Supported Mood Regulation **155**

Chapter 8 – An Agent Based Model for the Role of Social Support in Mood Regulation **157**

1 Introduction 158
2 Background 159
3 Model of a Human Agent 160
4 Simulation Experiments 164
5 Discussion 170
6 Conclusion and Future Work 171

Chapter 9 – Validation of a Computational Model for Mood and Social Integration **175**

1 Introduction 176
2 Background 177
3 Computational Model 178
4 Data Collection Method 182
5 Validation 184
6 Conclusion and Future Work 189

Chapter 10 – The Effects of Online Social Networks on the Social Aspects of an Individual's Life **195**

1 Introduction 196
2 Background 197
3 Methodology 198
4 Results 199
5 Discussion 206
6 Conclusion and future work 207

Part V: Discussion and Future Work **211**

Chapter 11: Discussion and Future Work **213**

1 Discussion 213

2 Summary of Contributions 214

3 Relations between various Domain Models 220

4 Significance and Limitations of the Research Work 225

5 Conclusion 227

6 Future work 228

SIKS dissertation series 235