

Contents

1	A Tale of Four Moguls: Interviews with Quincy Jones, Karlheinz Brandenburg, Tom Silverman, and Jay L. Cooper	1
	Newton Lee	
	1.1 Interview with Quincy Jones	1
	1.2 Interview with Karlheinz Brandenburg	4
	1.3 Interview with Tom Silverman	6
	1.4 Interview with Jay L. Cooper	8
	References	11
2	Getting on the Billboard Charts: Music Production as Agile Software Development	13
	Newton Lee	
	2.1 Music Appreciation and Songwriting	13
	2.2 Relationship between Music and Computer Programming	15
	2.3 Computers and Music in the Digital Age	16
	2.4 Music Production (Software Development) Life Cycle	17
	References	26
3	Producing and Its Effect on Vocal Recordings	29
	M. Nyssim Lefford	
	3.1 Process and Procedures	31
	3.2 Producing	42
	3.3 Instinct and Non-Linguistic Communication	57
	3.4 Features and Their Functions	67
	3.5 Conclusions	72
	References	72

4	Mediated Interactions and Musical Expression—A Survey	79
	Dennis Reidsma, Mustafa Radha and Anton Nijholt	
4.1	Introduction	79
4.2	Users and Musical Instruments: Conceptual Framework	80
4.3	Interaction Modes for Musical Expression: The Instrument as Tool	81
4.4	Mediated Communication in Musical Expression: The Instrument as Medium	84
4.5	Co-Creative Agents: The Instrument as Agent	90
4.6	Discussion	93
	References	95
5	Improvising with Digital Auto-Scaffolding: How Mimi Changes and Enhances the Creative Process	99
	Isaac Schankler, Elaine Chew and Alexandre R. J. François	
5.1	Introduction	99
5.2	The Mimi System	100
5.3	Performance Strategies	106
5.4	Formal Structures	111
5.5	Mimi4x and User-Guided Improvisations	116
5.6	Conclusion	123
	References	124
6	Delegating Creativity: Use of Musical Algorithms in Machine Listening and Composition	127
	Shlomo Dubnov and Greg Surges	
6.1	Introduction	127
6.2	History of Mathematical Theory of Music and Compositional Algorithms	128
6.3	Generative Music in Popular Music Practices	129
6.4	Computer Modeling of Music	132
6.5	Machine Improvisation	134
6.6	Modeling of Musical Style	135
6.7	Musical Semantics	137
6.8	Computational Aesthetics	138
6.9	Audio Oracle	141
6.10	Music Experience of Expectation and Explanation	145
6.11	Analyzing “Visions Fugitives”	148
6.12	Conclusion: The Challenge of Composing and the Pleasure of Listening	156
	References	157

7 Machine Listening of Music 159
 Juan Pablo Bello

7.1 Introduction 159
 7.2 Timbre 160
 7.3 Rhythm 166
 7.4 Tonality 174
 7.5 Conclusions 179
 References 181

8 Making Things Growl, Purr and Sing..... 185
 Stephen Barrass and Tim Barrass

8.1 Introduction 185
 8.2 Affective Sounds 186
 8.3 Aesthetics of Sonic Interfaces 188
 8.4 The Sonification of Things 189
 8.5 Mozzi: An Embeddable Sonic Interface to Smart Things 194
 References 202

9 EEG-Based Brain-Computer Interface for Emotional Involvement in Games Through Music..... 205
 Raffaella Folgieri, Mattia G. Bergomi and Simone Castellani

9.1 Introduction 205
 9.2 Implicit and Explicit BCI in Games: A Short Review 206
 9.3 Enhancing Gamers’ Emotional Experience Through Music 207
 9.4 Conclusions 233
 References 234

10 Computer and Music Pedagogy..... 237
 Kai Ton Chau

10.1 The Quest 237
 10.2 Technology and the Music Classroom 238
 10.3 Approach in Music Learning 241
 10.4 Fuzzy Logic and Artificial Intelligence 251
 10.5 Summary 252
 References 253

Index..... 255



<http://www.springer.com/978-1-4939-0535-5>

Digital Da Vinci

Computers in Music

Lee, N. (Ed.)

2014, XIX, 267 p. 102 illus., Hardcover

ISBN: 978-1-4939-0535-5